

November 2005

HIGHWAY SAFETY

Further Opportunities Exist to Improve Data on Crashes Involving Commercial Motor Vehicles



GAO Accountability · Integrity · Reliability Highlights

Highlights of [GAO-06-102](#), a report to congressional committees

Why GAO Did This Study

Large trucks make up 3 percent of the nation’s registered vehicles, but they were involved in 11 percent of all fatal crashes in 2003. To reduce the fatality rate, the Federal Motor Carrier Safety Administration (FMCSA) sets national safety goals and works in partnership with states to reach them. Crash data collected by states and submitted to FMCSA is key to these efforts, and to be fully useful, this data must be complete, timely, accurate, and collected in a consistent manner. GAO addressed (1) what is known about the quality of commercial motor vehicle crash data, and what states are doing to improve it, and (2) the results of FMCSA’s efforts to help states make improvements.

What GAO Recommends

To ensure uniformity in awarding data improvement funds to states, FMCSA should establish specific guidelines for assessing and awarding state funding requests.

Also, in order to address limitations in its data quality map, FMCSA should develop a plan for assessing and improving the map’s methodology, and it should provide a crash specific data rating and limitations of the map on its Web site.

The Department of Transportation agreed with our findings and recommendations in this report.

www.gao.gov/cgi-bin/getrpt?GAO-06-102.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Katherine Siggerud, (202) 512-6570, Siggerudk@gao.gov.

HIGHWAY SAFETY

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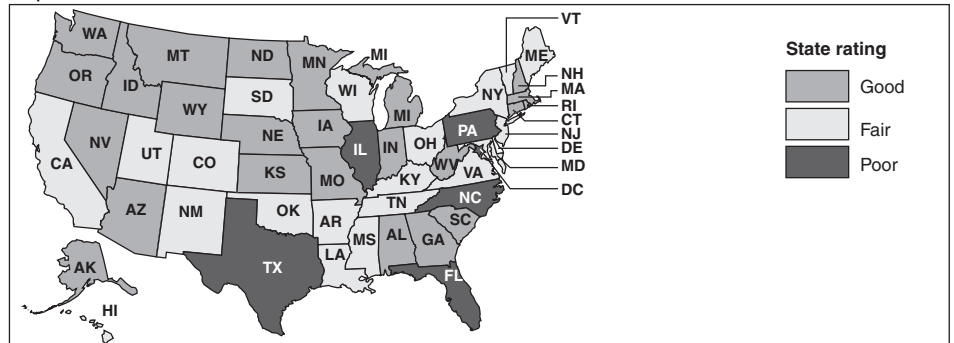
What GAO Found

Overall, commercial motor vehicle crash data does not yet meet general data quality standards of completeness, timeliness, accuracy, and consistency. For example, FMCSA estimates that nearly one-third of commercial motor vehicle crashes that states are required to report to the federal government were not reported, and those that were reported were not always accurate, timely, or consistent. States are undertaking four types of activities to improve data quality, including analyzing existing data to identify problems and develop plans for addressing them, reducing backlogs of data that have not been entered into state-level databases, developing and implementing electronic data systems, and providing training. As a result of these efforts, states have recently improved both the timeliness and the number of reportable crashes submitted to FMCSA.

FMCSA has two main efforts to support states in improving their reporting of commercial motor vehicle crash information—a commercial vehicle crash data improvement program and a data quality rating system—and both appear to be beneficial. Through the data improvement program, FMCSA has provided nearly \$21 million in discretionary grants to 34 states from 2002 through 2005. These grants have ranged from \$2,000 to \$2 million and have helped states conduct a variety of data improvement activities. GAO did not find problems with FMCSA’s oversight of the program, but we did note that FMCSA does not have formal guidelines for awarding grants to states. As state participation in the program increases, formal guidelines and systems would likely assist FMCSA in prioritizing states’ requests and ensuring consistency in grant awards.

FMCSA’s second major effort, a tool for rating states’ data quality, has proven to be an important tool for states to use in improving their crash data as well. These results are presented in a map that rates each state’s data quality as “good,” “fair,” or “poor.” According to both FMCSA and state officials, the map and the underlying rating system serve as an incentive for states to improve their crash data. While the map is useful, GAO identified problems in the methodology used for developing ratings. These problems may potentially lead to drawing erroneous conclusions about the extent of improvements that have been made, and discourage states from continuing to devote attention and resources to areas needing improvement.

FMCSA’s June 2005 data quality map showing each state’s overall data quality rating for crash and inspection data.



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Abbreviations

CMV	commercial motor vehicle
CVARS	Commercial Vehicle Analysis Reporting System
DOT	Department of Transportation
FARS	Fatality Analysis Reporting System
FMCSA	Federal Motor Carrier Safety Administration
GSA	General Services Administration
MCMIS	Motor Carrier Management Information System
MCSAP	Motor Carrier Safety Assistance Program
NHTSA	National Highway Traffic Safety Administration
SaDIP	Safety Data Improvement Program
SafeStat	Motor Carrier Safety Status Measurement System
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2005: A Legacy for Users
UMTRI	University of Michigan Transportation Research Institute

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United States Government Accountability Office
Washington, D.C. 20548

November 18, 2005

The Honorable Christopher S. Bond
Chairman
The Honorable Patty Murray
Ranking Minority Member
Subcommittee on Transportation, Treasury, the Judiciary, Housing
and Urban Development, and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Joe Knollenberg
Chairman
The Honorable John W. Olver
Ranking Minority Member
Subcommittee on Transportation, Treasury, and Housing and Urban
Development, the Judiciary, District of Columbia
Committee on Appropriations
House of Representatives

Large trucks make up only 3 percent of the nation's registered vehicles, but they were involved in 11 percent of all fatal crashes in 2003, the last year for which complete data is available. That year, large trucks were involved in more than 430,000 crashes, killing approximately 5,000 people.¹ In 1999, Congress established the Federal Motor Carrier Safety Administration (FMCSA) within the Department of Transportation² and mandated it with reducing crashes, injuries, and fatalities involving large trucks and buses. Currently, FMCSA has the goal of reducing commercial motor vehicle crash fatalities to 1.65 fatalities per 100 million miles of travel by 2008. As of fiscal year 2003, the commercial motor vehicle fatality rate was 2.3 fatalities per 100 million miles traveled, the lowest recorded since the Department of Transportation initiated tracking in 1975—but still 40 percent above the 2008 goal.

FMCSA works in partnership with states to reach commercial motor vehicle safety goals. States are the gatekeepers for the collection and

¹In 2003, there were also 289 fatal crashes involving buses.

²FMCSA was formerly a part of the Federal Highway Administration. Its creation as a separate entity was pursuant to the Motor Carrier Safety Improvement Act of 1999. Pub. L. No. 106-159, § 101.

reporting of commercial motor vehicle crash information. They receive crash reports completed by law enforcement personnel in local jurisdictions, compile them, and then submit crash reports to FMCSA. At the federal level, FMCSA manages a database which provides data that is used in rating motor carriers according to various safety indicators. Based on this rating, motor carriers are selected for safety inspections and reviews as part of FMCSA's enforcement efforts. While the data collected is primarily for federal use, states use the information to assist overall crash safety efforts and in setting commercial motor vehicle safety goals for themselves. Because the data is used in both federal and state decision-making on a variety of safety-related issues, it is important that it adequately meets data quality standards.

To be useful to both federal and state decision-makers, crash data must be complete, timely, accurate, and collected in a consistent manner. However, there have been concerns about the quality of the information FMCSA and the states use to direct their efforts. Beginning with the Motor Carrier Safety Improvement Act of 1999, Congress directed the Department of Transportation to improve the collection and analysis of data on commercial motor vehicle crashes. This resulted in the creation of a commercial motor vehicle data improvement program.³ The program was reauthorized in 2005.⁴ Since 2002, about \$21 million has been awarded to states to improve their crash data quality, but data quality problems have persisted.⁵ In February 2004, the Department of Transportation Inspector General released a report discussing limitations of the commercial motor vehicle crash data.⁶

³In 1999, Pub. L. No. 106-159, § 225, directed the Secretary of Transportation to carry out a program, which became known as the Commercial Vehicle Analysis Reporting System (CVARS). It is currently known as the Safety Data Improvement Program (SaDIP).

⁴Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2005: A Legacy for Users (SAFETEA-LU), Pub. L. No. 109-59.

⁵ FMCSA began SaDIP in FY2000, but did not begin awarding funds to states until FY2002. In August 2005, Congress, through the reauthorization of surface transportation programs, authorized FMCSA's SaDIP an additional \$11 million over the next 4 years. This will be used in addition to FMCSA funds to provide assistance to states.

⁶DOT Inspector General, *Improvements Needed in the Motor Carrier Safety Status Measurement System*, MH-2004-034, (Washington, D.C.: February 13, 2004).

In a Senate report accompanying the fiscal year 2005 appropriation for the Department of Transportation,⁷ Congress asked that we review FMCSA's program for helping states improve their commercial motor vehicle crash data. The report directed us to describe the benefits obtained through the program, identify what can be done to improve the effectiveness of the program, and address concerns regarding crash data raised in the February 2004 Department of Transportation Inspector General's report. Accordingly, this report examines (1) what is known about the quality of commercial motor vehicle crash data and what states are doing to improve it, and (2) the results of FMCSA's efforts to facilitate the improvement of the quality of commercial motor vehicle crash data sent to the federal government.

To describe the quality of commercial motor vehicle crash data, we reviewed a number of sources, including data reported by FMCSA and existing studies on the quality of commercial motor vehicle crash data. We interviewed officials from FMCSA, contractors that develop FMCSA crash data tools, and commercial vehicle industry researchers and public interest organizations to gain their perspective on commercial motor vehicle crash data quality. To provide information on states' efforts to improve commercial motor vehicle crash data, we reviewed grant documentation for 34 states that participated in FMCSA's Safety Data Improvement Program (SaDIP) as of September 2005.⁸ We also conducted case studies in six states that participated in the program.⁹ States were chosen based on a wide variety of factors including crash data quality and level of crash reporting. Additionally, we conducted phone interviews with states that did not participate, or are no longer participating, in the program.¹⁰ To provide results of FMCSA efforts to facilitate the improvement of commercial motor vehicle crash data quality, we conducted interviews with officials

⁷Senate Report 108-342.

⁸The 34 states are Alaska, California, Colorado, Connecticut, Georgia, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and West Virginia. Participation was voluntary.

⁹The six case studies were conducted in Georgia, Minnesota, North Carolina, Ohio, Oklahoma, and Washington.

¹⁰Telephone interviews were conducted with FMCSA officials from New Hampshire, New Jersey, Michigan, and Missouri. We found during our interviews that New Hampshire is still participating in the program.

from FMCSA on the administration and management of the SaDIP program. We also analyzed the guidance and support FMCSA provided to states and assessed FMCSA's role in coordinating commercial motor vehicle data quality initiatives. We reviewed studies conducted by the University of Michigan Transportation Research Institute and determined that the methodologies used in assessing the quality of the data states submit to FMCSA were sound and that the studies provided sufficiently reliable results for our purposes. Through site visits, a review of grant applications, interviews with relevant stakeholders and experts, and these studies, we were able to determine shortcomings in the reliability of FMCSA's commercial motor vehicle crash data. However, we determined that the data was sufficiently reliable for the purpose of case study selection. Our work was conducted from February 2005 through November 2005 in accordance with generally accepted government auditing standards. See appendix I for more details regarding our objectives, scope, and methodology.

Results in Brief

Overall, commercial motor vehicle crash data does not yet meet general data quality standards of completeness, timeliness, accuracy, and consistency. For example, according to FMCSA, as of fiscal year 2004 nearly one-third of commercial motor vehicle crashes that states are required to report to the federal government were not reported, and those that were reported were not always accurate, timely, or consistent. Data quality problems most often stem from errors or omissions either by law enforcement officers at the scene of a crash or in the processing of crash reports to a state level database. To address data quality problems, a number of states are undertaking four major types of data improvement activities:

- Analyzing existing data to identify where problems are and to develop plans for addressing them;
- Reducing backlogs of data that have not been entered into state-level databases in order to create more complete state crash files, through steps such as hiring contract employees;
- Developing and implementing electronic data systems for collecting and processing crash information in a more timely, accurate, and consistent manner; and

-
- Providing training, such as educating law enforcement officers on the definitions and criteria for commercial motor vehicle crashes, to create more accurate and consistent data.

These state efforts are resulting in some progress. Based on analysis of FMCSA data, a great number of crashes are being reported to FMCSA. Overall, the total number of commercial motor vehicle crashes being reported to FMCSA has increased by 59 percent between fiscal year 2000 and fiscal year 2004, while the length of time it takes states to report these crashes to FMCSA has decreased as well.

FMCSA has two main efforts to support states in improving their reporting of commercial motor vehicle crash information—a commercial vehicle crash data improvement program and a data quality rating system—and both appear to be beneficial. Through the data improvement program, FMCSA has provided nearly \$21 million in discretionary grants to 34 states between 2002 and 2005. These grants have ranged from \$2,000 to \$2 million and have helped states conduct all four data improvement activities previously described. The six states in our case studies generally improved their data quality, mainly through projects funded in whole or in part through the grant program. While we did not find problems with FMCSA's oversight of the program, we did note that FMCSA does not have formal guidelines for awarding funds to states. Because these grants are discretionary, and because more states are expected to participate in the program in the future, having formal guidelines and systems in place would likely assist in prioritizing states' requests and ensuring consistency in awarding funds. FMCSA's second major effort, the State Safety Data Quality map, has proven to be an important tool for states to use in improving their crash data as well. This map, created by FMCSA and the Volpe National Transportation Systems Center, is a color-coded display depicting the overall data quality for each state in one of three rating categories—"good" (green), "fair" (yellow), or "poor" (red). According to both FMCSA and state officials, the map and the underlying rating system serve as an incentive for states to make improvements to their crash data. Despite the map's utility thus far, we identified potential problems both in the methodology used for developing ratings and the risk of drawing erroneous conclusions from the map. One example of a problem with the current methodology is that the overall ratings combine information about crashes with information stemming from FMCSA's inspections of motor carriers. Combining ratings for both crash and inspection data quality tends to make it difficult to determine how states are doing specifically with their crash data. In addition, some states with a "good" rating in completeness are not

reporting all crashes to FMCSA. Rating states as “good” when in fact they have problems may discourage states from continuing to devote attention and resources to areas needing improvement and possibly misdirect program efforts. FMCSA is aware of many of the limitations of the map, but has not yet developed and implemented a formal plan to improve it. Addressing these limitations will strengthen the data quality map as a tool for improving commercial motor vehicle crash data.

To ensure that FMCSA is able to target limited funds as effectively as possible, we are recommending that FMCSA create specific guidelines and criteria for awarding commercial motor vehicle crash data improvement funding. We are also recommending that FMCSA develop a plan to improve the data quality map, including assessing the methodology for developing ratings, providing results in greater detail, and documenting any limitations associated with the map. These enhancements will provide users with a more useful tool to view the condition and progress made in states’ commercial motor vehicle crash data.

Background

FMCSA was established as a separate administration within the U.S. Department of Transportation (DOT) on January 1, 2000, pursuant to the Motor Carrier Safety Improvement Act of 1999. FMCSA issues and enforces the federal motor carrier safety regulations that govern many aspects of specified commercial trucking and bus operations, including the interstate operation and maintenance of commercial motor vehicles (CMV). Regulations promulgated by FMCSA specify requirements that must be met by drivers of these vehicles. FMCSA conducts compliance reviews¹¹ of truck and bus companies, and performs safety audits of new entrants¹² into the industry. In addition, FMCSA trains inspectors to conduct safety audits, while states and local authorities are responsible for conducting the inspections and submitting the results to FMCSA.¹³ This partnership between FMCSA and the states annually results in about 3 million truck

¹¹Compliance reviews are detailed audits of carriers, the results of which sometimes lead to enforcement action.

¹²Safety audits review safety management systems and initial operating performance of new motor carriers.

¹³Roadside inspections are conducted primarily by states. The information from these inspections is collected and reported to FMCSA.

and bus inspections, 7,000 to 13,000 compliance reviews, and more than 19,000 new-entrant safety audits.

CMV crash data is key to FMCSA's efforts. CMV crash data is collected by local law enforcement, sent to the state, and then processed and uploaded by the state into FMCSA's data system. FMCSA maintains a database management system in each state so they can submit crash reports into FMCSA's central data system, the Motor Carrier Management Information System (MCMIS). FMCSA uses the information in its Motor Carrier Safety Status Measurement System, also known as SafeStat, to target carriers for compliance reviews to ensure that they are following safety regulations.¹⁴ SafeStat uses a variety of data to rank carrier safety, but it places the heaviest weight on crash data.

Federal and state data quality guidelines call for CMV crash data to meet four basic quality standards:¹⁵

- **Completeness:** To support adequate decision-making for identifying problems and developing appropriate countermeasures, data should be collected for all reportable CMV crashes in the state, and data on all appropriate crash variables such as the carrier's identification number, should be submitted to FMCSA.
- **Timeliness:** To make decisions about current safety problems, identify trends, or target carriers that pose immediate threats to highway safety, CMV crash data should be available for state and federal analytical purposes within a useful timeframe.
- **Accuracy:** To adequately assess CMV crash problems and target the appropriate carriers for enforcement, all data within reportable CMV crash records should be accurate and reliable.

¹⁴The SafeStat data are also used to target carriers for roadside inspections.

¹⁵Along with definitions developed by FMCSA, the National Governors' Association also provides guidance for submitting complete and accurate data on commercial vehicle crashes. In addition, the National Highway Traffic Safety Administration has provided guidance for reporting crash data based on the Model Minimum Uniform Crash Criteria and the American National Standard Manual for Classification of Motor Vehicle Traffic Records.

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- **Consistency:** To target carriers nationwide and to compare state results, CMV crash data should be collected uniformly using the same standards and applying the same criteria across jurisdictions.

FMCSA has provided more specific guidelines and criteria for meeting each of these standards. On timeliness, for example, FMCSA calls for states to submit all CMV crash data to MCMIS within 90 days of when the crash occurs. In order to facilitate complete reporting of CMV crashes, FMCSA recommends data elements, such as the identity of the carrier, vehicle configuration, cargo body type, etc., as the minimum information to be

collected in order to have complete information on CMV crashes.¹⁶ FMCSA has also created criteria to assist in consistent reporting of crash information. These published criteria are used for identifying reportable CMV crashes to be submitted to MCMIS (see fig. 1).

Figure 1: Criteria for Selecting Truck and Bus Crashes to Report to FMCSA

<p>Report a crash to FMCSA if it involves:</p> <ul style="list-style-type: none">• Any truck having a gross vehicle weight rating of more than 10,000 pounds or a gross combination weight rating over 10,000 pounds used on public highways, or• Any motor vehicle designed to transport more than eight people, including the driver, or• Any vehicle displaying a hazardous materials placard (regardless of weight) <p>AND</p> <p>That vehicle is involved in a crash while operating on a roadway customarily open to the public, which results in:</p> <ul style="list-style-type: none">• A fatality: Any person(s) killed in or outside of any vehicle (truck, bus, car, etc.) involved in the crash or who dies within 30 days of the crash as a result of an injury sustained in the crash;• An injury: Any person(s) injured as a result of the crash who immediately receives medical treatment away from the crash scene; or• A tow-away: Any motor vehicle (truck, bus, car, etc.) disabled as a result of the crash and transported away from the scene by a tow truck or other vehicle.
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Source: FMCSA.

Note: Exceptions include crashes that involve: 1) a personally-owned truck or passenger vehicle meant for personal use only as the sole vehicle meeting the criteria above, or 2) a driver with a disease condition (e.g., stroke, heart attack, diabetic coma or epileptic seizure) and no other injury or damage occurs, or 3) deliberate intent (suicide, self-inflicted injury, homicide, etc.), with no unintentional injury or damage. Of the 430,000 CMV crashes that occur each year, about 150,000 meet reporting criteria.

¹⁶There are 20 data elements that were originally recommended by the National Governors' Association in 1989 and later adopted by FMCSA in 1992.

With the Motor Carrier Safety Improvement Act of 1999, Congress established a program to improve the collection and analysis of CMV crash data.¹⁷ This resulted in the creation of the Commercial Motor Vehicle Analysis Reporting System (CVARS). CVARS, which is now known as SaDIP was originally intended to be a standalone data collection system. After determining that a separate system would duplicate existing efforts, however, FMCSA decided to use SaDIP as a federal funding tool to support state efforts to collect and report CMV crash data.¹⁸

Besides changes in scope, SaDIP has also changed greatly in how the program is administered. Since fiscal year 2001, FMCSA has received funding from the Congress to implement this program. As a new agency, FMCSA did not have the appropriate contracting infrastructure in place to administer the funds. Therefore it transferred funds and the administrative duties of the program to the National Highway Traffic Safety Administration (NHTSA), which awarded several grants to states in fiscal year 2002. NHTSA also provided some of the funding to the General Services Administration (GSA) to enter into cooperative agreements with several states to fund multi-year data improvement projects. In fiscal year 2003, however, FMCSA assumed responsibility for all oversight of SaDIP funding.

FMCSA provides SaDIP funds to states through two different methods. States can receive 1-year grants to fund specific projects, or they can enter into multi-year cooperative agreements in order to fund multiple efforts that are necessary to identify and reduce data quality problems. States can receive both of these types of funds from FMCSA and can apply for grant funding multiple times. SaDIP funding is discretionary in nature, allowing states to request the amount of funding they need to conduct data improvement projects. Since 2002, SaDIP funding has been provided to 34 states, and as of September 2005, awards ranged from \$2,000 to \$2 million totaling approximately \$21 million. (See app. IV for funding distribution by state.)

In February 2004, the Department of Transportation Inspector General issued a report on SafeStat, the system FMCSA uses to target its

¹⁷Pub. L. No. 106-159, § 225.

¹⁸The program was designed to be a system similar to the National Highway Transportation Safety Administration's Fatality Analysis Reporting System (FARS).

compliance reviews.¹⁹ The report identified a number of problems with SafeStat, much of which stemmed from the quality of the crash data being used in calculating carrier ratings. The State Safety Data Quality map, discussed later in the report, was developed in response to the recommendations in the 2004 report.

States Continue to Have Problems with CMV Crash Data Quality, but Are Pursuing a Variety of Improvement Efforts

When measured against generally accepted standards for completeness, timeliness, accuracy, and consistency, states continue to have challenges with the quality of their CMV crash data. Many of these challenges are based in the collection and processing of data at the local level, and often reflect broader crash data quality problems for all types of vehicle crashes. To address remaining limitations, and improve the completeness, timeliness, accuracy, and consistency of the data, states are undertaking four main types of efforts: analyzing data to identify problem areas, eliminating backlogs of data not yet entered, creating electronic systems to expedite data entry, and training law enforcement officers in ways to improve the data they submit.

Challenges Remain in Meeting Data Quality Standards

The completeness, timeliness, accuracy, and consistency of CMV crash data is currently not meeting generally accepted data quality standards. Table 1 provides examples of some of the overall problems we (and others) have identified. Appendix V, which contains summaries of the six states we visited, provides more specific examples.

¹⁹The SafeStat data are also used by to target carriers for roadside inspections. Department of Transportation Inspector General, *Improvements Needed in the Motor Carrier Safety Status Measurement System*, MH-2004-034 (Washington, D.C.: February 13, 2004).

Table 1: Examples of Problems with Commercial Vehicle Crash Data Quality

Completeness	As of 2004, FMCSA estimates that about one-third of the reportable CMV crashes are not being submitted to their data system—the Motor Carrier Management Information System (MCMIS). ^a In addition, FMCSA estimates 20 percent of nonfatal crashes are not being reported. Further, studies indicate that even those crashes reported to MCMIS often have missing data. ^b
Timeliness	The average length of time from when a crash occurs to when the crash data is uploaded to MCMIS is 99 days—9 days over the required time limit. While this is not far from the goal, there is substantial variation in timeliness among states. For example, our analysis of state CMV crash data shows timeliness ranges from 13 days to 339 days. ^c
Accuracy	FMCSA assesses accuracy by determining the number and percentage of interstate crashes uploaded to MCMIS without enough information to determine a carrier's DOT number (known as a non-match). As of fiscal year 2004, 15 percent of CMV crash records in MCMIS can not be matched to a carrier's DOT number. ^d
Consistency	According to an analysis by FMCSA, 33 of 50 states have crash reports that do not adequately follow the criteria for reporting commercial motor vehicle crashes to FMCSA. ^e

^aMCMIS contains information on the safety fitness of commercial motor carriers and hazardous material shippers subject to the Federal Motor Carrier Safety Regulations and the Hazardous Materials Regulations. States upload their crash information to MCMIS via FMCSA's SafetyNet.

^bSource: FMCSA

^cSource: Analysis of MCMIS data from fiscal year 2000 through fiscal year 2004.

^dSource: Analysis of fiscal year 2004 MCMIS data.

^eSource: Comparison of State Crash Reports with SafetyNet Selection Criteria and Key Data Secondary Elements Chart, FMCSA, August 12, 2005.

Data Quality Problems Often Reflect Difficulties in Collection and Processing of Crash Reports

CMV crash data quality problems often stem from issues that occur when data is initially collected at the scene of a crash and later processed through the state. We reviewed reports on crash data quality including individual state reviews conducted by the University of Michigan Transportation Research Institute (UMTRI).²⁰ We also discussed these matters with state officials. We identified two key causes of poor data quality: (1) problems in interpreting how to fill out crash reports at the scene and (2) crash report processing issues ranging from competing priorities at the local level to complex routing of crash reports.

²⁰FMCSA contracts with the UMTRI to conduct individual state data quality assessments. The assessments focused on the completeness of the data but also reviewed some accuracy and timeliness issues. To date, they have completed assessments of the following eight states: California (2005), Florida (2004), Illinois (2005), Michigan (2004), Missouri (2004), New Jersey (2005), North Carolina (2005), and Ohio (2003). UMTRI assessed 2003 data for all states except for Ohio, which used 2000 data and Missouri which used 2001 data.

Misinterpretation of Criteria and Definitions by Officers Filling Out Crash Reports

According to studies and our discussions with state officials, data collected at the scene of a crash can be flawed because of law enforcement misinterpretation of reporting criteria and definitions.²¹ Misinterpretation can occur for several reasons, such as infrequent opportunities for officers to receive training on filling out crash reports or unfamiliarity resulting from infrequent occurrences of CMV crashes in an officer's jurisdiction. Below are common problems with properly reporting CMV crashes:²²

Identifying reportable crashes. While crashes that result in a fatality are easily identifiable as a reportable crashes, tow-away or injury crashes are more difficult to identify. For example, UMTRI's review of eight states showed that five of those states experienced problems with reporting crashes that did not involve a fatality. According to UMTRI, this is likely due to a lack of understanding of criteria for reporting CMV crashes to FMCSA (see fig. 1).

Identifying reportable commercial motor vehicles. FMCSA is responsible for enforcing safety regulations for interstate carriers, but collects crash information on a variety of CMVs that meet certain criteria. According to UMTRI reports, states had problems identifying smaller trucks and they were less likely to be reported because law enforcement officials are less likely to recognize them as qualifying CMVs. Further, law enforcement officials may be confused about reporting interstate and intrastate carriers to FMCSA. UMTRI's review of 8 states showed that five of the states encountered problems in identifying appropriate vehicle type for reporting to FMCSA (see fig. 1).

Crash Report Processing Issues

Several other issues relate to the processing of crash reports. These tend to fall into the following three main categories:

Competing priorities at the officer level. Data collection is complicated because at the scene of a crash, an officer's first priority is to

²¹Appendix III provides detailed information on what is a "reportable crash" and what is a "reportable commercial motor vehicle."

²²While FMCSA regulates interstate motor carriers (i.e., carriers operating across states), information on crashes involving both interstate or intrastate (i.e., carriers operating only within a state) should be submitted to FMCSA. CMVs that are being used only for private use and are involved in a crash do not need to be submitted to FMCSA.

ensure the safety of those involved; data collection is often a lesser concern. Only after the situation has been stabilized can the officer fill out the crash report. Competing priorities can make it difficult for law enforcement to adequately complete a crash report. According to a report by NHTSA, crash reporting is often a low priority when traffic safety data is not perceived as relevant to the work of law enforcement. This was confirmed in states we visited. For example, one state official with whom we spoke said that submitting crash data is often dependent on how much priority the local police chief places on data quality.

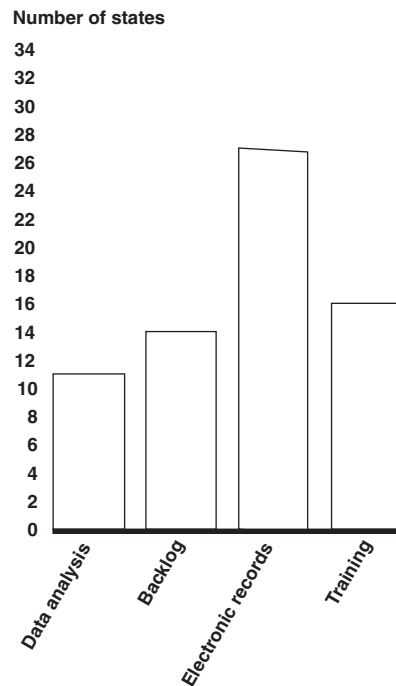
Manual crash report forms. Typically, law enforcement officers complete handwritten crash reports, which are then manually submitted for data processing at a local or state agency. According to an FMCSA official, nearly all states use manual crash reporting forms to some extent. Completing crash reports by hand and manually processing the information has the potential to lead to errors in the data. Data quality may be further compromised by the use of a supplemental CMV crash report. States may have a general crash report for use in all crashes and a supplemental CMV crash report to be completed if a CMV is involved. For example, four of the six case study states we reviewed used a supplemental form to report a CMV accident. When data has to be captured in a separate form, law enforcement officers may not always complete the form, and sometimes it may be separated from the original crash report or even lost. UMTRI found in one state that use of the supplemental crash report may be leading to CMV crashes not being submitted to FMCSA.

Complex processing. Even with a correctly completed crash report that is properly identified as a CMV crash, states may have a complicated process in place to route CMV crash data to FMCSA and this may contribute to lengthy delays. UMTRI state assessments found that processing issues in some states led to delays and resulted in incomplete submission of crash data. One official told us that all law enforcement agencies in his state send crash reports to the state patrol office where the report is scanned into electronic format. The electronic version of the report is then sent to the state department of transportation where additional location data is entered into the report. From here, the report enters the state database and then is periodically uploaded to FMCSA. This process can take significant time, especially when the original crash report is missing information.

States Are Pursuing a Variety of Efforts to Address Data Quality Issues

States are undertaking a variety of projects in order to improve the completeness, timeliness, accuracy, and consistency of CMV crash data. These projects encompass four general types of efforts: research and analysis, reduction of reporting backlogs, electronic processing of crash records, and training. Figure 2 shows state participation in each of these four efforts. These projects directly affect the completeness, timeliness, accuracy, and consistency of the states' CMV crash data.

Figure 2: State Participation in CMV Crash Data Improvement Efforts from Fiscal Year 2002 through Fiscal Year 2005



Source: GAO analysis of FMCSA data.

Note: Data available for the 34 states that have participated in FMCSA's data improvement program. Several states are participating in more than one effort.

Data Analysis to Identify Problems

Eleven of the 34 states have research projects to evaluate crash data collection and reporting practices.²³ Assessing data collection and reporting processes allows states to determine how well their data meet each of the data quality standards of completeness, timeliness, accuracy, and consistency, providing them with a useful tool for determining where they are going to concentrate their improvement efforts.

Out of 34 states for which we have data, 11 have conducted research to identify data problems. During our case studies, we found examples of states conducting data analysis to identify their CMV crash data collection and reporting problems. (See app. V for more information on our case study states.) For example, one state conducted an analysis in order to determine why approximately half of the eligible crashes in the state crash file were not being reported to FMCSA. The analysis found that the state's crash file was not in the correct format to be correctly transferred to FMCSA. In addition, frequent errors in the state or zip code fields, and incomplete or inaccurate data, were leading to problems. A federally funded study of the state's crash data found approximately 50 percent of the state's crash reports for one year (2003) were not reported to the federal crash file due to problems at the state level coding and preparing crash data for transfer to FMCSA. Another state conducted a traffic records assessment that found the major deficiency in the state's crash file was the lack of timely data. It also identified the lack of effective quality controls during data entry and non-reporting of eligible crashes as deficiencies. Following the state's assessment, researchers made recommendations to help the state prioritize projects, including planning for the eventual implementation of electronic crash data collection.

Reduction of Crash Database Backlogs

Fourteen of the 34 states have projects to reduce the backlog of crash reports that need to be entered into state crash files. In most states, until crashes are included in the state file, they are not reported to FMCSA. Hence, backlog reduction is essential for creating a complete state crash file, and with providing FMCSA with complete data about CMV crashes. A complete data file is critical for performing crash and trend analysis, for making informed policy decisions, and for gaining a better understanding of CMV safety issues.

²³Additional research and analysis is also being conducted by other public and private research entities.

Of the 34 states for which we have data, 14 are participating in backlog reduction projects, including four of our six case study states. In these four states, temporary employees were hired to eliminate data backlogs. For example, in one state, contract employees were working to reduce a backlog of 600,000 crash reports. Data entry work began in July 2004 and state officials expect it to be completed by September 2005. Another state used temporary employees to eliminate a backlog of approximately 2 million crash records. This effort began in 2002, and as of June 2005, the data backlog has been completely eliminated and the state is now processing crash reports within 3 days of receipt.

Using Electronic Systems to Expedite CMV Crash Data

Twenty-seven of the 34 states have projects to collect or input CMV crash data through electronic systems. Electronic reporting allows for more accurate and timely transfer of crash data to state and federal crash files. Electronic transfer of crash data can reduce duplication and data entry error, because paper-based data collection systems are subject to human error and time delays. While these projects enhance the quality of CMV crash data, often they are large in scope and require law enforcement agencies to purchase hardware. Uniform electronic crash reporting systems are heavily dependent on acceptance from all stakeholders and often some jurisdictions may already have their own systems.

Of the 34 states for which we have data, 27 are participating in electronic crash record projects, including all six of the case study states. For example, one state has developed software that facilitates a nightly transfer of CMV crash records from the Division of Driver and Vehicle Services to the state patrol agency. The state patrol agency then submits the crash reports to FMCSA. The state is also working to provide computer hardware and Internet access so that state patrol officers can complete crash reports online. Another state is developing electronic crash reporting capabilities using handheld computers, which will eliminate handwritten crash reports, and the need to manually enter crash report data into an electronic system.

Improving Law Enforcement Training

States are providing training to law enforcement officers in CMV crash data collection. Training for law enforcement officers on how to correctly identify a CMV and how to accurately complete a police accident report can help to improve the completeness, accuracy, and consistency of CMV crash data since many of the mistakes in reporting are made at the crash

site.²⁴ Training is also an opportunity to highlight the link between data collection and its end use in planning and prevention.

Seventeen of the 34 states have projects aimed at providing law enforcement training initiatives, and all six of our case study states had some form of CMV training. In addition, all case study states we visited recognized problems with the quality of CMV crash data resulting from issues at the collection point. For example, one state provides on-going CMV training to teach officers to properly identify and report commercial vehicle crashes. This state also tries to show law enforcement officers how the data is used in planning and prevention in order to show the significance of good data. However, state officials told us that there has not been a lot of participation in the training from local law enforcement agencies. Another state is planning to develop a training video and visor cards²⁵ for statewide dissemination. The visor cards will assist officers in CMV identification and provide information that will help police properly complete all the necessary crash reporting documentation.

These state efforts are resulting in some progress. An analysis of FMCSA data shows that a greater number of crashes are being reported to FMCSA since 2000. Overall the total number of commercial motor vehicle crashes being reported to FMCSA has increased by 59 percent between fiscal year 2000 and fiscal year 2004, while the length of time it takes states to report these crashes to FMCSA has decreased as well.

FMCSA's Efforts Have Contributed to CMV Data Quality Improvements

FMCSA's efforts appear to improve CMV crash data quality and have had a positive impact on state crash data. Specifically two efforts, the Safety Data Improvement Program (SaDIP) and the State Safety Data Quality map, have contributed to the changes. SaDIP funding has allowed states to improve data completeness, timeliness, accuracy, and consistency by supporting the implementation of new activities or increasing the scope and timeliness of existing projects. While FMCSA has provided adequate

²⁴FMCSA provides training classes for collecting and coding state crash data to representatives of the enforcement community in a growing number of states. In addition FMCSA has developed and maintained customized large truck crash data collection training materials for each state, including train-the-trainer visuals and student workbook materials, to enable the states to carry the training forward to officers throughout their state and to incorporate the training into their academies.

²⁵These are information cards that can be attached to a law enforcement officer's sun visor.

administration and oversight of SaDIP, the management of the program with regard to awarding grants raises some concerns. There are no formal guidelines in place for awarding funding to the states, and while this has not yet presented a problem, it may in the future. Funding continues to be made available, and more states continue to request funds for new projects. The State Safety Data Quality map is an evaluation tool that provides ratings for states' crash and inspection data quality, and displays the ratings so that a state's performance relative to other states is apparent. The map, which is publicized on FMCSA's Analysis and Information (A&I) Online Web site, allows state officials and the public to view the status of states'

CMV crash and inspection data quality.²⁶ The map is being used as an indicator of states' progress in improving the completeness, timeliness, and accuracy²⁷ of crash data and by virtue of its public nature it is an incentive for states to improve their crash information. However, the methodology used for the ratings has limitations that may hinder the map's effectiveness in monitoring the status of CMV crash data quality.

FMCSA's SaDIP Has Supported State Efforts to Improve Data Quality

As of July 2005, FMCSA had provided about \$21 million to 34 states in order to assist in improving the quality of CMV crash data.²⁸ Several states have received funding more than once, and in fiscal year 2005, FMCSA made available to states almost twice the amount of money than it had at the beginning of the program (\$3.9 million in fiscal year 2000 versus \$7.3 million in fiscal year 2005). Additionally, recently passed transportation legislation authorizes a total of \$11 million to be used for SaDIP funding for

²⁶The A&I Online website, developed and maintained by FMCSA Analysis Division provides useful motor carrier safety information and analysis over the Internet. The Web site increases FMCSA's effectiveness in carrying out its programs and provides the motor carrier industry and the public with information to make safety-minded decisions. The website is a valuable information resource to FMCSA in promoting motor carrier safety and is widely used by FMCSA and state field staff in their preparation for and in conducting on-site motor carrier safety audits.

²⁷The data quality map includes an overriding indicator of crash consistency of a state's non-fatal crash data submitted to FMCSA, however, it is not measuring the consistency of data; rather it is another indicator of completeness.

²⁸These data are current as of September 2005. In addition to funds provided directly to states, FMCSA provided \$1,200,000 to contractors to assist states in improving data quality, bringing the total amount spent on state data improvement efforts to \$21,891,394.

fiscal years 2006-2009.²⁹ The states that have participated in SaDIP account for about two-thirds of all CMV crashes occurring between April 1, 2004, and March 31, 2005, reported to FMCSA's MCMIS database, and 70 percent of the 2003 fatalities reported to MCMIS. FMCSA's goal is to provide funding for projects that will have the largest impact on improving state data describing CMV crashes. FMCSA also encourages states that are participating in data improvement projects that are already funded to apply for SaDIP funds in order to provide additional assistance to these larger efforts. (See table 2 for the annual distribution of SaDIP funds and app. IV for fund distribution by state.)

Table 2: Annual Distribution of SaDIP funds

Fiscal year	Funds budgeted for SaDIP	Funds awarded to states
2000	\$3,865,000	\$0
2001	2,748,000	0
2002	5,462,614	5,207,014
2003	4,967,500	854,732
2004	4,913,990	5,449,467
2005	7,340,800	9,180,181
Total	\$29,297,904	\$20,691,394

Source: FMCSA.

Note: These data are current as of September 2005. In addition to funds provided directly to states, FMCSA provided \$1,200,000 to contractors to assist states in improving data quality, bringing the total amount spent on state data improvement efforts to \$21,891,394.

SaDIP has Yielded Several Positive Results

States have used the SaDIP funds to conduct a variety of projects, including those discussed earlier in this report. These funds have benefited states in several different ways, including increased focus on CMV data quality and advancement and expansion of ongoing broader data quality projects.

SaDIP increased national attention to the problems associated with the quality of CMV crash data reported to the federal government. Several state officials we interviewed stated that they have noticed an increase in the

²⁹FMCSA's Office of Information Management plans on requesting funds in line with SAFETEA-LU to include \$2 million in grant funds for FY2006, and \$3 million for FY2007-2009, as provided for in SAFETEA-LU for a total of \$11 million.

amount of focus given to CMV crash data issues. For example, presentations made by FMCSA at several national conferences and workshops have highlighted the importance of data quality, and informed states of the various types of assistance, such as training and funding, that are available to them. During our case studies, we were told the following:

- One state official said that by providing funds to be used for specific purposes, SaDIP had the effect of focusing attention on data quality improvement. SaDIP has sustained a high level of interest in data quality and has been a catalyst to improving traffic records coordination across state agencies.
- Another state official said SaDIP helped to improve communication between the state patrol and the state's department of vehicle services. Because grants were provided to both agencies, analysts at the agencies are working together and have a better understanding of each other's data needs and share access to their respective databases.

In half of our case study states, SaDIP has also allowed states to expedite data improvement projects that were already planned for implementation.

- One state official told us that the state had been considering a plan to improve traffic safety data, including CMV crash data, and SaDIP funds provided it with the means to implement this plan. The long-term funding provided by the SaDIP cooperative agreement to support a full time employee was also a crucial element in gaining support from state decision-makers.
- One state official said the SaDIP grant made it significantly easier to prioritize and expedite a data project that the state was already considering implementing. The additional funding allowed the state to specifically address CMV crash data and use other funding to continue to address broader crash data issues.

Finally, SaDIP has allowed states to increase the scope of ongoing projects or develop new initiatives. Two of our six case study states have used SaDIP funds in addition to other resources to develop comprehensive and long-term data quality initiatives to address the completeness, timeliness, accuracy, and consistency of the CMV crash data they report to FMCSA.

- Officials in one state told us that SaDIP funding supports elements of the state's electronic traffic information processing initiative. SaDIP

funding has allowed the state to resolve a considerable backlog in crash records, creating a more complete crash file, and work has begun to develop a new electronic crash report that will be used—first by the state police—and then by local law enforcement in the rest of the state. Without resolution of this backlog, the state was unable to fully implement the CMV data component of its electronic traffic information processing initiative. Doing this allowed the state to have more timely, accurate, and consistent crash data.

- SaDIP funding has helped another state develop an electronic crash report and traffic records system. As previously stated, this will allow the state to have more timely, accurate, and consistent crash data. The state’s goal is to develop the new system by 2008 and the state is evaluating and using multiple sources of funding to achieve this goal. Early in the process, the state made a strategic decision to target all crash data, not just commercial vehicle data. While the state uses SaDIP to develop electronic crash reporting software, SaDIP funding has also been leveraged to help the state accomplish its data quality improvement goals more quickly. For example, the new crash reporting capabilities developed through the SaDIP grant allow for much better crash analysis and targeting of safety efforts along major commercial vehicle corridors in the state.

FMCSA Has Made Improvements in the Administration of SaDIP; However, Management of Grant Awards Raises Concerns

SaDIP has evolved over time and FMCSA has made several efforts to improve the administration of the program. For example, beginning in fiscal year 2006, FMCSA will be implementing a new application package for states to use in applying for SaDIP. While SaDIP had some preexisting application requirements for states, this application package provides a uniform application for states to use, and it is the first time states are going to be required to submit quantifiable project objectives and program measures. This will allow FMCSA to begin to measure the effectiveness of state improvement efforts. Additionally, SaDIP will be posted on Grants.gov (<http://www.grants.gov>) in 2006.³⁰ This federal website provides a single source for grant applicants to electronically find and apply for federal funds. FMCSA will also be updating its State Program Manager’s

³⁰The creation of this Web site (<http://www.grants.gov>) is part of the federal government’s grants streamlining initiative. The initiative is the government-wide set of organizations and activities responsible for implementing the Federal Financial Assistance Management Improvement Act of 1999. Pub. L. No. 106-107, §113.

manual to include guidelines for the roles and responsibilities of state program managers in administering SaDIP. Finally, FMCSA will be issuing funds at designated times during the year. Currently, funds are awarded to states on a rolling basis, but beginning with the implementation of the new application package the funds will be awarded on specific dates to all applicants. This is expected to improve the program's organization and FMCSA's ability to keep track of grant progress as the number of program participants increases. Throughout these administrative changes, FMCSA has maintained sufficient oversight of the states participating in SaDIP. FMCSA has contracted with a company that is responsible for monitoring SaDIP participant states, and ensuring that they are submitting quarterly progress reports containing sufficient detail to FMCSA. This contractor also has regular conversations with the FMCSA Division Administrators in the SaDIP states, and it maintains copies of SaDIP-related paperwork.

While these efforts are positive steps, we have concerns with FMCSA's lack of guidelines for awarding funds to states. FMCSA has not yet established formal guidelines for determining how much money a state should receive, or if the state should receive the funds in the form of a grant or a cooperative agreement. Since the beginning of the program, funds awarded to states have ranged from \$2,000 to \$2 million for projects ranging from specific activities to broader efforts that span three or more years. (See app. IV for funds awarded by state.) These awards have taken the form of both grants and cooperative agreements between the state and the federal government. Currently these decisions are made on a state-by-state basis, informally by a small review panel. The state's application, data quality history, discussions with the state's FMCSA division administrator, and any other relevant and available data on the state are consulted when making funding awards.

While the absence of guidelines has not proven to be problematic to date, having formal guidelines will better ensure consistency and discipline in managing the grant program among states, particularly as states' needs become more targeted or more states decide to participate in the program. It will also add integrity to the grant management system and assist in providing better administration and oversight of SaDIP projects. For example, such guidelines would likely allow FMCSA to better assess and prioritize states' funding requests, including more formally considering whether proposed activities adequately address problems states identify in the proposal, whether the amount of funding requested is appropriate for the proposed activities, and whether multiple-year versus one-year funding is appropriate. Further, formal guidelines would provide a more structured

framework to evaluate the effectiveness of different SaDIP project activities and assist in guiding future state improvement efforts.

Data Quality Map Has Spurred Improvements, but Limitations Curb Map's Continued Usefulness

The State Safety Data Quality map has encouraged states to improve their CMV data quality, but limitations exist that may hinder the map's usefulness as a tool for monitoring and measuring CMV crash data quality. The State Safety Data Quality map was created by FMCSA and the Volpe National Transportation Systems Center principally to provide context for both crash and inspection data used in the SafeStat system; however, it has

evolved into a tool to evaluate state-reported crash and inspection data.³¹ It is based on a system that rates crash and inspection data quality—completeness, timeliness, and accuracy—as “good,” “fair,” or “poor.”³² The map has proven to be a major incentive for states to initiate CMV crash data improvements, for gaining support in implementing these improvements, and as a tool to monitor CMV crash data quality. However, we have identified some important limitations that can affect the data quality map's future usefulness.

The State Safety Data Quality Map is an Incentive for States to Make CMV Crash Data Improvements

Since the State Safety Data Quality map is accessible by the public and presents data quality ratings in a simplified form, the map is a motivator for states to improve their CMV crash data. According to officials at FMCSA, they said the map has been very influential in encouraging states to improve their CMV crash data. Corroboratory comments came from the state level, where many of the officials in case study states provided anecdotes of how the data quality map served as an impetus for initiating improvements and gaining support.³³ Here are examples of how the map

³¹Crash data includes information about CMV crashes as reported by the states. Inspection data is submitted by the states to FMCSA and includes information collected through roadside inspections. Crash data is assessed for completeness, timeliness, and accuracy. Inspection data is only assessed for timeliness and accuracy.

³²The map's methodology includes a “Crash Consistency Overriding Indicator.” A state is flagged if it submits less than 50 percent of the average number of reported non-fatal crash records for the current year based on the previous three-year average of non-fatal crash records.

³³This is based on our six case study visits to states that are currently participating in SaDIP and telephone interviews with state officials that had previously participated or had not participated in SaDIP.

assisted states in initiating or expediting improvements in CMV crash information.

- One state includes the data quality map ratings in weekly status reports to agency heads and in reports to the governor. An official in this state said that once the data quality map was shown to the governor, it raised the importance of improving CMV crash data. This state now posts the data quality map on state agency Web sites and uses it as a tool to compare its data quality efforts to the rest of the nation.
- One state official told us that when agency leaders understand that their state has a “poor” rating, they are likely to make data improvement a priority and focus attention and resources on the issue.
- Another official said that the map helped officials to “see the light.” In this state, the data quality map helped initiate a process that led to improved communication and coordination for data quality at the highest levels for all safety and security projects within the state.

The Data Quality Map is Important in Addressing Data Quality

FMCSA and states we reviewed use the State Safety Data Quality map to measure states’ CMV data quality and progress being made in their data improvement efforts. Our review indicated that although the map was created as a tool for providing context to FMCSA’s SafeStat system, both FMCSA and the states were using it specifically for monitoring the status of CMV crash data quality. State officials were also using it to identify data quality problems and assist states in targeting state improvement efforts. Here are examples from the states we contacted:

- In one state an official reported that it was very helpful for law enforcement officials and department heads to instantly recognize their state’s data quality status on the map.
- In another state, officials said they knew they had a data quality problem, but were unable to identify the specific issue. The data quality map indicated that the state’s accuracy was poor, and the problem was specifically with matching carriers in the state database with crashes in MCMIS.
- In another state, officials said the data quality map focused attention on the state’s data quality spending and results, and it helped state officials re-prioritize spending.

Both FMCSA and state officials in many of the states we spoke with recognized the map as an important tool in measuring progress in their crash data improvement efforts. Further, FMCSA officials said the map was used as an assessment of a state's success in the SaDIP program. While officials also said they reviewed data in the MCMIS system to monitor state progress, an important measure of success in the program was a state's status in the State Safety Data Quality map and the underlying CMV crash measures.

The State Safety Data Quality Map Has Limitations that May Affect its Effectiveness as a Tool for Monitoring and Measuring CMV Crash Data Quality

Given the importance that FMCSA and the states attach to the data quality map, it appears to be a good first step in monitoring states' data quality. However, we found limitations with many features of the map that diminish its usefulness as an effective tool for specifically monitoring and measuring state progress in their improvement efforts. Specifically, we identified several limitations with the methodology used to develop the data quality map's ratings, as well as with the measures themselves that should be addressed. Below are some of the key limitations. A more detailed discussion of limitations is located in appendix II.

- The data quality map measures used to calculate the completeness, timeliness, and accuracy of CMV crash data falls short of providing a complete measure of CMV crash data quality. While each data quality measure has some limitations, one key measure—completeness—has a number of difficulties. Most importantly, the completeness measure is limited in the data it is assessing. The completeness measure only evaluates fatal CMV crashes, which represents about 3 percent of all reportable CMV crashes.³⁴ In addition, the completeness measure does not assess the completeness of the information contained within the crash report.

The completeness measure's methodology relies solely on comparing CMV fatal crash data in MCMIS to data states submit to the Fatality Analysis

³⁴Of the 436,000 police-reported crashes involving large trucks in 2003, about 150,000 were required to be reported to FMCSA and of these, 4,289 resulted in at least one fatality.

Reporting System (FARS).³⁵ This particular approach provides additional limitations to the completeness measure. First, there are some definitional differences between FARS and MCMIS data that can account for about 4 percent of the crash records. Secondly, FARS data is not timely. For example, the June 2005 map relies on 2003 FARS data; thus the completeness measure does not reflect the current status of CMV crash data. In addition, since FARS data is only released once a year, quarterly issuances of the map do not necessarily reflect changes in the number of fatal crashes. Table 3 below describes in more detail the limitations for each crash data quality measure.

Table 3: Comparison of Data Quality Standards and State Safety Data Quality Map Measures

Data quality standard		State Safety Data Quality Map measure	Limitations
Completeness	<p>All reportable CMV crashes in the state and data on all appropriate crash variables are submitted to FMCSA.</p> <p>FMCSA recommends 20 CMV crash data variables that should be reported on.^a</p>	<p><i>Percentage of Fatal Crash Records Reported</i></p> <p>Compares the number of large trucks in crashes involving a fatality in MCMIS versus those in the FARS.^b</p>	<p>Includes only reported, fatal crashes; reflects only about 3 percent of all CMV crashes required to be reported to FMCSA.</p> <p>Bases completeness on FARS data, though some differences exist in state definitions of a CMV fatal crash and may result in an inflated or deflated rating.</p> <p>Does not represent current status of completeness.</p> <p>Does not measure the completeness of CMV information within a crash report (missing variables).</p>

³⁵NHTSA's National Center for Statistics and Analysis created and developed the Fatality Analysis Reporting System (FARS). Fatality information derived from FARS includes motor vehicle traffic crashes that result in the death of an occupant of a vehicle or a nonmotorist within 30 days of the crash. FARS contains data on all fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico. Each state employs a federal analyst who conducts a number of quality control procedures to ensure correct information about the fatality crash. A final FARS file is completed once a year.

(Continued From Previous Page)

Data quality standard		State Safety Data Quality Map measure	Limitations
Timeliness	<p>All reportable CMV crash records are available for state and federal analytical purposes in a useful timeframe.</p> <p>FMCSA recommends that CMV crash data be reported within 90 days of the crash occurrence.</p>	<p>Percentage of Crash Records Reported within 90 Days</p> <p>The percentage of State-reported fatal and non-fatal crash records reported within 90 days in the MCMIS database for carriers over a 12-month time period.^c</p>	<p>Only reflects records that are uploaded into MCMIS and have not been changed or edited.^d</p> <p>Backlogs of crash reports, once entered, can negatively affect timeliness rating.</p>
Accuracy	<p>All data within reportable CMV crash records are accurate and reliable.</p>	<p>Percentage of Matched Crash Records</p> <p>The percentage of State-reported fatal and non-fatal crash records in the MCMIS database for interstate carriers and intrastate hazardous material carriers over a 12-month time period that were matched to a motor carrier in MCMIS.</p>	<p>Only measures accuracy of one variable (identity of the motor carrier—the U.S. DOT number); neglects to measure the accuracy for other recommended variables.</p>
Consistency	<p>Crash data should be collected uniformly. Officials should use the same standards and apply the same criteria uniformly across jurisdictions.</p> <p>FMCSA provides guidelines and criteria for reporting CMV crashes.</p>	<p>None</p>	<p>N/A</p>

Source: FMCSA and Volpe National Transportation Systems Center. Data Quality Standards are based on GAO's review of data quality guidelines from a variety of sources including FMCSA, NHTSA, and Data Nexus Inc., and includes references to the Model Minimum Uniform Crash Criteria, National Governors' Association Elements and Criteria, and the American National Standard Manual for Classification of Motor Vehicle Traffic Records.

^aIn 1992, FMCSA adopted the National Governors' Association (NGA) recommended data elements, requiring these data to be collected and reported on motor carrier crashes.

^bFMCSA created an "Crash Consistency Overriding Indicator" to indicate consistency in reporting of non-fatal CMV crashes. The indicator flags states that may be experiencing major problems in reporting crash data. The Crash Consistency Overriding Indicator is the percentage of state-reported non-fatal crashes as compared to a three-year average of reported non-fatal crashes. States that have reported fewer than 50 percent of non-fatal crash records for the current year based on the previous three-year average of non-fatal crash records are flagged and receive a rating of "poor" regardless of their ratings in any of the other data quality indicators. This indicator is also limited because it only identifies extreme cases of under-reporting and does not assess if there is a substantial increase in reported non-fatal crash records.

^cIncludes both interstate carriers (those carriers that operate between states) and intrastate carriers (carriers that operate only within one state) though FMCSA is only responsible for regulating interstate carriers.

^dFMCSA's MCMIS currently does not have the ability to track the original upload date when a crash record is edited after or changed. Therefore, records that are changed after the original upload are not used in the calculation for timeliness. For additional information see appendix II.

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- The data quality map is limited in its ability to meaningfully monitor and track CMV crash data quality over time. Since the State Safety Data Quality map was first issued, a large majority of states have been rated as “good” or “fair” for the completeness, timeliness, and accuracy measures. Since the first issuance of the map, over 90 percent of the states have been rated “good” or “fair” for completeness, and about three quarters of the states have been rated “good” or “fair” for crash timeliness and crash accuracy. However, our review shows that states need to continue to make improvements. In addition, since the majority of states are rated as “good” or “fair” in measures, it is also difficult to measure any progress made because many states have already reached the highest rating. For example, as of the June 2005 data quality map, 41 states were rated “good” in crash completeness. Because these states have already reached the highest rating for this measure, it may prevent measuring any subsequent progress in this data quality standard.

There are other problems with using the data quality map to track trends. Based on our review, a state’s rating can temporarily decline for a variety of reasons—even for implementing improvements. Hence, for that period of time, the data quality map is not accurately reflecting a state’s true data quality status. Officials in one state told us that the state was implementing a new electronic system which in the long term would improve its data quality greatly. However, current CMV crash reporting was slowed during implementation, and the state’s rating went down from “fair” to “poor.”

- The data quality map’s ratings for overall data quality combine data from crashes with data from FMCSA’s inspections, making it difficult for map users to obtain an overall picture based solely on crash data. For the overall data quality rating, individual crash measures for completeness, timeliness, and accuracy are combined with inspection measures for timeliness and accuracy. For each of the five individual crash and inspection measures a state will receive a rating of “good,” “fair,” or “poor.”³⁶ A state’s overall rating depends on how well the state did across all five measures (see table 4).

³⁶They are also assessed on whether a state’s reporting meets a minimum threshold based on past reporting (i.e., the “Crash Consistency Overriding Indicator”).

Table 4: Overall Data Quality Rating

Rating	Thresholds for overall data quality rating
Good	No “poor” and a minimum of one “good” in a crash or inspection measure
Fair	Maximum of one “poor” in a crash or inspection measure
Poor	Two or more “poor” ratings in crash or inspection measures or a red flag in the Crash Consistency Overriding Indicator

Source: FMCSA.

Currently, users can only view CMV crash data quality by individual measures (completeness, timeliness, and accuracy). Separating the inspection data and presenting a specific overall CMV crash data quality rating (a combined rating composed of completeness, timeliness, and accuracy for crash data only) would enhance a state’s ability to understand its crash data status and to monitor progress in improving the information.

- While the State Safety Data Quality map provides a description of the methodology used, it does not identify limitations to the methodology. While many of these limitations to the map are acknowledged by FMCSA, they are not publicly displayed on the State Safety Data Quality map Web site. The absence of this information limits users’ understanding of the map’s data and increases the potential for incorrect deductions and improper map-based decisions.

FMCSA officials are aware of many of the limitations that we have identified and we recognize their efforts to improve the State Safety Data Quality map to date. However, they do not have a formal plan in place to implement improvements. Further, it is important to acknowledge these issues so that users understand the limitations of the data quality map as a tool. During our review we learned that not only was the data quality map consulted in awarding SaDIP funds, it was also consulted when awarding Motor Carrier Safety Assistance Program (MCSAP) High Priority funds.³⁷

³⁷MCSAP high priority funds are funds provided to states and local governments to carry out activities and projects that directly support the MCSAP, including supporting, enriching, or evaluating state commercial motor vehicle safety programs. These funds are allocated at the discretion of FMCSA. States apply for funding and are awarded funds in an 80/20 split with the state (80 percent of funding is provided via federal sources and states are required to provide the other 20 percent of the funds) except if the funds are used for education and outreach activities. Currently if a state is rated as “poor” in its crash data quality and it applies for High Priority funding, the state is required to use its High Priority funding for crash data improvements.

Further, according to officials at FMCSA and Volpe National Transportation Systems Center, there has been some discussion of expanding the usage of the map in the future for CMV crash data efforts. As the data quality map gains wider use, it will become even more important that these limitations are addressed.

Conclusions

The grant program and FMCSA's collaborative efforts with states have had a positive impact on improving the quality of states' crash data, therefore ultimately enhancing the ability of both federal and state governments to make highway planning and safety enforcement decisions. While states have made progress in improving the quality of this data—in terms of timeliness, completeness, accuracy, and consistency—much remains to be done. With additional funding through the reauthorization of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users and as states refine and target areas needing further improvement with respect to their crash data, it is expected that additional states will participate in the program. FMCSA will need a more formal framework to better ensure that the decision-making process for awarding funds to SaDIP program applicants is conducted uniformly.

FMCSA's efforts to improve the quality of commercial motor vehicle crash data have brought considerable attention to the issues associated with poor commercial motor vehicle crash data. Providing states with funding to improve their CMV data quality and publicizing a rating through a data quality map are incentives that work in tandem to maximize states' efforts. It is clear that states pay attention to their ratings of "good," "fair," or "poor" on the data quality map. However, the limitations we identified highlight some important concerns with the data quality map's ability to measure progress and accurately portray states' commercial motor vehicle crash data quality. As FMCSA continues to make improvements, it will be important for these ratings to become more precise, so that FMCSA and the states can obtain the clearest picture possible of the progress being made.

Recommendations for Executive Action

We recommend that the Secretary of Transportation direct the Administrator of FMCSA do the following:

- Establish specific guidelines for assessing state proposals for SaDIP grants in order to better assess and prioritize states' funding requests and provide uniformity in awarding funds.

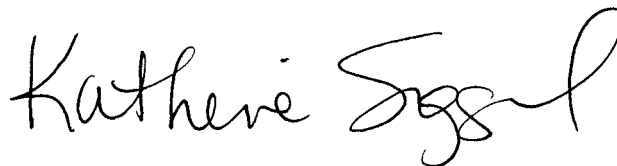
-
- Increase the State Safety Data Quality map's usefulness as a tool for monitoring and measuring commercial motor vehicle crash data by ensuring that it adequately reflects the condition of the states' commercial motor vehicle crash data and continues to motivate states in their improvement efforts. Specifically, FMCSA should develop a plan for assessing and improving the data quality map's methodology. In addition, FMCSA should display an overall crash data rating separately from the inspection rating, and provide information on the limitations of the State Safety Data Quality map and the underlying ratings on FMCSA's Analysis and Information (A&I) Online Web site.

Agency Comments and Our Evaluation

We provided a draft of this report to the Department of Transportation for its review and comment. The department agreed with our findings and recommendations in this report. Department officials provided some technical comments and some minor additions to provide more detail on FMCSA's training efforts.

We will send copies of this report to the interested congressional committees, the Secretary of Transportation, and other interested parties. We will make copies available to others upon request. In addition, the report will be available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff has any questions about this report, please call me at (202) 512-6570. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix VI.



Katherine Siggerud
Director, Physical Infrastructure

Objectives, Scope and Methodology

Congress asked us to review the Federal Motor Carrier Safety Administration's (FMCSA) program for helping states improve their commercial motor vehicle crash data. As part of this review, we were asked to describe the benefits obtained through the program, identify what can be done to improve the effectiveness of the program, and address concerns regarding crash data raised in a February 2004 Department of Transportation (DOT) Inspector General's report. The specific objectives of this report were to explain (1) what is known about the quality of commercial motor vehicle crash data and what states are doing to improve it, and (2) the results of FMCSA's efforts to facilitate the improvement of the quality of commercial motor vehicle crash data sent to the federal government.

To provide information on the quality of states' commercial motor vehicle (CMV) crash data and efforts to improve it, we reviewed grant applications and project information from 39 states. Of these 39 states, 34 participated in the Safety Data Improvement Program (SaDIP) and 5 states either chose not to participate in the program or their proposals were not accepted. We also conducted site visits to six of these states—Georgia, Minnesota, North Carolina, Ohio, Oklahoma, and Washington. We chose our case study states based on a variety of criteria, including participation in the SaDIP grant program, the type of agencies with which the state works under SaDIP, the number of CMV crashes in the state, the number of reported CMV crash fatalities, and data quality map ratings. To help ensure that our states reflected a variety of experiences, we chose states that had different combinations of these criteria. To understand the insights and experiences of states that no longer participated—or had never participated—in SaDIP, we also interviewed officials in Michigan, Missouri, New Hampshire, and New Jersey.¹ While the results from the case studies and interviews cannot be projected to the universe of states, they are nonetheless useful in illustrating the uniqueness and variation of CMV crash data systems and the challenges states face in improving them. During our case study visits we met and discussed the status of state crash data systems with a variety of traffic safety data officials.² The discussions included gathering information

¹New Hampshire was intended to represent a state that no longer participated in SaDIP; however, we learned during our interview that the original grant expiration date had recently been extended to 2006.

²These officials, in general, included representatives from state traffic records coordinating committees, the governor's highway safety offices, departments of public safety, departments of transportation, and departments of motor vehicles.

on FMCSA's data quality criteria³ but also included, for those participating in the program, state objectives and progress made with SaDIP funds. For additional perspective, we also interviewed key experts from organizations responsible for the development of crash data systems and models used by FMCSA, carrier industry officials, and public interest organizations. Finally, we conducted a literature review of studies published by the University of Michigan Transportation Research Institute (UMTRI). The Institute plans to conduct studies in all states to determine where problems are occurring in the collection of CMV crash data and in the reporting of this data to FMCSA. As of September 2005, studies had been conducted in eight states. We reviewed the studies and determined the methodologies used in determining whether Motor Carrier Management Information System (MCMIS) and state CMV crash data were sound. We reviewed the studies conducted by UMTRI and determined that the methodologies used in assessing the quality of the data states submit to FMCSA were sound and that the studies provided sufficiently reliable results for our purposes. Through site visits, a review of grant applications, interviews with relevant stakeholders/experts, and these studies, we were able to determine shortcomings in the reliability of FMCSA's CMV crash data. However, we determined that the data was sufficiently reliable for our purpose of case study selection.

To provide results of FMCSA's efforts to facilitate the improvement of the state CMV crash data quality, we conducted interviews with officials from participating states and from FMCSA concerning the administration and management of SaDIP. We also analyzed the guidance and support provided by FMCSA to states for CMV data improvement efforts and assessed FMCSA's role in coordinating CMV data quality initiatives. In addition, we reviewed FMCSA's State Safety Data Quality map and assessed the methodology used by FMCSA in evaluating states' crash data quality. We interviewed officials and key experts at FMCSA and the Volpe National Transportation Systems Center responsible for developing and managing the data quality map. We also interviewed state officials from states participating—and not participating—in the SaDIP program to find out their views on the data quality map and its use as a monitoring tool for CMV crash data improvements.

We conducted our review from February 2005 through November 2005 in accordance with generally accepted government auditing standards.

³FMCSA's data quality criteria include completeness, timeliness, accuracy, and consistency.

State Safety Data Quality Map Limitations

This appendix explains, in greater detail than the body of our report, the concerns we (and others) have raised about the limitations in the methodology FMCSA uses to develop ratings for the State Safety Data Quality map. The measures FMCSA employs to measure the completeness, timeliness, and accuracy of CMV crash data quality are limited, and do not provide comprehensive measurements of these attributes as established by the general data standards discussed in the body of this report. As a result, the ability to draw conclusions about the actual quality of a state’s data is limited.

The definitions FMCSA uses for each of the crash measures are shown in table 5, together with the criteria that constitute a rating of “good,” “fair,” or “poor.” In the sections that follow we explain the limitations associated with each measure, followed by other limitations that stem from the current methodology.

Table 5: State Safety Data Quality Map Measures for CMV Crashes

Data quality standard	Measure	Criteria
Completeness	The measure compares CMV fatality data in the MCMIS database against those in the Fatality Analysis and Reporting System (FARS). The FARS data is available through 2003.	Good = match to FARS is greater than or equal to 90 percent Fair = match to FARS is between 80 and 89 percent Poor = match to FARS is below 80 percent
Timeliness	This measure reflects the percentage of state-reported crash records uploaded to the MCMIS database within the 90-day standard.	Good = the percentage of reported records within 90 days is greater than or equal to 85 percent Fair = the percentage of reported records within 90 days is between 60-84 percent Poor = the percentage of reported records is less than 60 percent
Accuracy	This measure reflects the percentage of state-reported crash records (fatal and non-fatal) that were matched to a motor carrier in MCMIS over a 12-month period.	Good = the percentage of matched records is greater than or equal to 95 percent Fair = the percentage of matched records is between 85 and 94 percent Poor = the percentage of matched records is below 85 percent

Source: FMCSA.

Completeness: Overall Completeness is Based on Fatal Crashes Only

A key limitation in FMCSA’s measure of crash data completeness is the inability to evaluate completeness against nonfatal CMV crashes. Currently, the total number of nonfatal crashes occurring on a state-by-state basis is

unknown; no baseline exists against which to measure these records.¹ Consequently, FMCSA is limited to measuring crash data completeness with fatal CMV crashes, which is approximately 3 percent of all CMV crashes.²

Even within this narrowed dataset, the use of FARS³ as the basis of comparison poses other limitations:

- **There are notable differences in definitions used in the two databases.** Most importantly, MCMIS can be subject to individual state definitions that may differ from FARS. According to officials at the Volpe National Transportation Systems Center, the range of these state-driven definitional differences is unknown. However, based on anecdotal evidence received from states and reported by Volpe, these differences can vary by state and can account for about 4 percent of crash records.⁴ Some examples are below:
 - A crash fatality resulting from the private use of a large truck may not meet the criteria as a reportable crash for MCMIS, but it is considered a large truck crash fatality by FARS.
 - MCMIS defines a large truck as any truck greater than a 10,000 gross vehicle weight rating. Many states do not collect the gross vehicle weight rating of vehicles and instead define a large truck based on an older FMCSA reporting criterion of greater than six tires or another definition of their choosing. As such, counts of large trucks derived from state crash databases (and reported to FARS) may be inconsistent with counts of vehicles that were reported to MCMIS.⁵

¹FMCSA is currently engaged in two efforts to assess baselines for non-fatal crashes in individual states. One effort is being conducted by Data Nexus and another is being conducted through the UMTRI assessments mentioned earlier in the report.

²Of the 436,000 police-reported crashes involving large trucks in 2003, about 150,000 were required to be reported to FMCSA and of these, 4,289 resulted in at least one fatality.

³FARS is a database of all fatal vehicle crashes maintained by the National Highway Traffic Safety Administration.

⁴Also, according to Volpe, one state official estimated that definitional differences account for about 10 percent of fatal CMV crashes in their state.

⁵Recently, FMCSA distributed visor cards to state officials that provide illustrations of FMCSA reportable CMVs. See appendix III for copies of these cards.

The effect of these definitional differences is evident when comparing MCMIS fatal CMV crashes to FARS data—the state’s index on completeness for crash data rises above 100 percent. The extent to which this occurs is substantial: in our analysis of the June 2005 issuance of the map, 24 of 51 states (47 percent) had a completeness measure of greater than 100 percent.⁶

- **FARS data is not current.** FARS is released once per year, detailing the prior calendar year’s crash statistics. The lag between the most recently available FARS data and the most recent map issuance can be considerable. For example, the 2004 FARS annual report is not scheduled to be released until fall 2005 and as a result, the baseline for completeness data in the June 2005 map is based upon 2003 crash data.

Timeliness: Timeliness is Not Based on All Reported Crashes

The timeliness measure currently relies on a subset of records states submit to MCMIS. Any record that has been edited or changed since it was originally entered into MCMIS is not included in the calculations.⁷ If a record is edited, the initial upload date is replaced with the date it was updated. Because FMCSA’s timeliness rating is based on the percentage of crash reports uploaded within 90 days of the crash, and edited records no longer reflect their initial upload date, they cannot be used in the timeliness calculation without distorting a state’s rating. The consequence, however, is that timeliness is not measured against the entire universe of crashes in MCMIS—the more records a state edits, the fewer records its timeliness rating represents. FMCSA has acknowledged this problem with the edited records and is taking steps to resolve it.

Another limitation with this measure is that efforts to reduce backlogs of crash records—a positive effort—can have a negative effect on the timeliness rating. If a state submits a backlog of reports from CMV crashes that occurred more than 90 days previously, and the crash took place during the period of time which the FMCSA rating covers, then the state’s timeliness rating will be negatively affected. Conversely, if a state has a large backlog, its current timeliness rating may not be a meaningful

⁶This includes the District of Columbia.

⁷Editing might be needed, for example, if activity at the state level discloses errors or incomplete information in the record as originally submitted to MCMIS.

representation of timeliness because the methodology has no way to capture those records that are accruing in the backlog.

Accuracy: Accuracy is Based on Only One Variable

The measure for accuracy on the data quality map is based only on a match of a CMV crash report in MCMIS, against a registered carrier in MCMIS. The U.S. Department of Transportation (DOT) assigns each interstate motor carrier a unique identifier number—the DOT number. For this measure, accuracy is evaluated primarily based on the degree to which a carrier's DOT number is the same as identified for a crash in MCMIS.⁸ Therefore, a crash report with a missing or invalid DOT number may be considered inaccurate, even if the rest of the information on the report provides accurate information on the crash. Currently, the data quality map does not assess the accuracy of any other data elements; however, FMCSA has been working with states to improve their collection of CMV crash information. For example, recently FMCSA distributed visor cards to state officials that explain how to determine who the carrier is, and where the correct carrier's DOT number can be found. See appendix III for copies of these cards.

⁸In general, if a crash report is missing a DOT number, FMCSA attempts to use other identifiers in the report to match it to a registered carrier, but officials told us that this has been met with limited success.

FMCSA Reportable Crash, CMV, and Carrier Identification Visor Cards

The following are copies of visor identification cards that FMCSA created as educational tools for law enforcement officers. The cards can be placed in officer's sun visor and referenced to determine whether a CMV crash should be reported, for identifying a vehicle as a CMV, and for identifying the correct carrier involved in the crash. FMCSA provided these to states to distribute to enforcement officers with the intention they will increase the officers' ability to properly identify a CMV and a reportable CMV crash.

**Appendix III
FMCSA Reportable Crash, CMV, and Carrier
Identification Visor Cards**


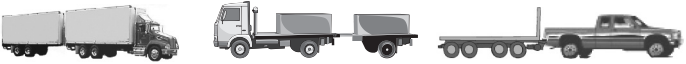











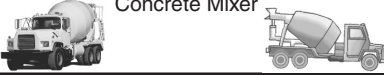
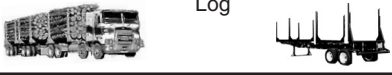








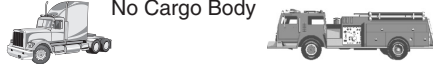
Figure 3: FMCSA Reportable Crashes

Truck and Bus Crashes Reportable to FMCSA		
REPORT A TRAFFIC CRASH IF IT INVOLVES...		
<p>Any truck that has a gross vehicle weight rating (GVWR) of more than 10,000 pounds or a gross combination weight rating (GCWR) of more than 10,000 pounds used on public highways</p>	OR	<p>Any motor vehicle with seating to transport nine (9) or more people, including the driver's seat</p>
OR		
<p>Any motor vehicle displaying a hazardous materials placard (regardless of weight)</p>		
... AND RESULTS IN		
<p>A fatality: <u>any</u> person(s) killed in or outside of <u>any</u> vehicle (truck, bus, car, etc.) involved in the crash or who dies within 30 days of the crash as a result of an injury sustained in the crash</p>	OR	<p>An injury: <u>any</u> person(s) injured as a result of the crash who immediately receives medical treatment away from the crash scene</p>
OR		
<p>A tow-away: <u>any</u> motor vehicle (truck, bus, car, etc.) disabled as a result of the crash and transported away from the scene by a tow truck or other vehicle</p>		
Revised 06/05		
Federal Motor Carrier Safety Administration		U.S. Department of Transportation www.fmcsa.dot.gov
<p>Crashes involving commercial motor vehicles and some non-commercial motor vehicles must be reported on a state's crash report and to the FMCSA. A commercial motor vehicle is any motor vehicle that is used on a trafficway for the transportation of goods, property, or people in interstate or intrastate commerce.</p>		
INCLUDED:	EXCLUDED:	
<p>Here are some examples of commercial and non-commercial operations that, when involved in a crash, should be included if they meet the criteria on the front of this card.</p> <p>Examples:</p> <ol style="list-style-type: none"> 1. A trucking company or individual owner/operator hauling the goods of a business for a fee. 2. A manufacturing company hauling its own products to retail stores, or a retail store delivering products to its buyers. 3. A farm hauling its produce to market. 4. A motorcoach, airport shuttle, or hotel-owned shuttle bus or limousine service transporting passengers. 5. A government-owned truck or bus. 6. A school bus transporting students to/from school or school-related activities. 7. A rented or leased truck used to transport either commercial or personal goods. 8. A truck or truck tractor owned and operated for commerce being used for a personal trip or to transport personal goods. 	<p>Here are some examples of non-commercial operations that, when involved in a crash, should <u>not</u> be included.</p> <p>Examples:</p> <ol style="list-style-type: none"> 1. A non-commercial horse owner transporting hay bales from his pasture on one side of the road to his stables on the other side of the road in a truck with a GVWR greater than 10,000 pounds. 2. A homeowner carrying recyclables to a drop-off point in a personally owned pickup truck with GVWR greater than 10,000 pounds. 3. A family of 10 persons taking a trip in the family's 12-person van. 4. A personally owned pickup truck hauling a boat, horse or utility trailer with a GCWR greater than 10,000 pounds not operating in commerce or as part of a business. 5. A family operating a personally owned and registered recreational vehicle or motor home. 	

Source: FMCSA.

**Appendix III
FMCSA Reportable Crash, CMV, and Carrier
Identification Visor Cards**

Figure 4: Reportable Commercial Motor Vehicle Configurations and Cargo Body Type


Vehicle Configuration		
<p>Bus (9-15 Seats, Including Driver)</p> 	<p>Truck/Trailer (Single-Unit Truck Pulling a Trailer)</p> 	
<p>Bus (16 or More Seats, Including Driver)</p> 	<p>Truck Tractor (Bobtail)</p> 	
<p>Single-Unit (2 Axles, 6 Tires)</p> 	<p>Tractor/Semi Trailer (One Trailer)</p> 	
<p>Single-Unit (3 or More Axles)</p> 	<p>Truck Tractor/Double (Two Trailers)</p> 	
	<p>Truck Tractor/Triple (Three Trailers)</p> 	
<p>Federal Motor Carrier Safety Administration</p>		
<p>U.S. Department of Transportation www.fmcsa.dot.gov</p>		
Cargo Body Type		
<p>Bus (9-15 Seats, Including Driver)</p> 	<p>Dump</p> 	<p>Pole</p> 
<p>Bus (16 or More Seats, Including Driver)</p> 	<p>Concrete Mixer</p> 	<p>Log</p> 
<p>Van/Enclosed Box</p> 	<p>Auto Transporter</p> 	<p>Intermodal Chassis</p> 
<p>Cargo Tank</p> 	<p>Garbage/Refuse</p> 	<p>Vehicle Towing Motor Vehicle</p> 
<p>Flat Bed</p> 	<p>Grain, Chips, Gravel</p> 	<p>No Cargo Body</p> 
<p>Federal Motor Carrier Safety Administration</p>		
<p>U.S. Department of Transportation www.fmcsa.dot.gov</p>		

Source: FMCSA.

Figure 5: Responsible Carrier and Correct DOT Number Identification

How to Find the Responsible Carrier and Correct U.S. Dot Number


SIDE OF THE VEHICLE



In most cases, this is good for name and number. Look for a number preceded by the letters: USDOT.

DON'T STOP


...keep on looking...



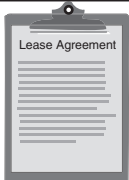
The information on the side of the truck may not be the U.S. DOT number, name, or address of the responsible motor carrier.

DRIVER INTERVIEW

1. Is the vehicle leased or rented?
2. Who is the motor carrier responsible for this load?
3. Who is directing and controlling the movement of this vehicle?
4. Where is the motor carrier's principal place of business?

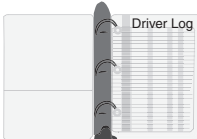


LEASE AGREEMENT




identifies the name of the lessee and their U.S. DOT number.

DRIVER'S LOG



contains the name of the motor carrier and the city and State for the carrier's principal place of business.

SHIPPING PAPERS




provide the name of the motor carrier responsible for the load, but not the carrier's U.S. DOT number.

NOTE: VEHICLE REGISTRATION
 Generally good for identifying owner or registrant.
CAREFUL: This may not be the responsible carrier!

FMCSA WEB SITE: <http://safer.fmcsa.dot.gov/CompanySnapshot.aspx> is an excellent source for verifying a motor carrier's U.S. DOT number, legal name, "doing business as" name, physical address, and phone number.

Revised 06/05

Federal Motor Carrier
Safety Administration



U.S. Department of Transportation
www.fmcsa.dot.gov

How to Find the Responsible Carrier and Correct U.S. Dot Number

EXAMPLE 1: John Smith owns his own truck tractor, operating under John Smith Trucking. He contracts with White Manufacturing to take one of its trailers loaded with its goods from New York to Los Angeles.

Who is the Motor Carrier:

A. John Smith?
 B. White Manufacturing?

John Smith is the motor carrier, because he is the entity that has agreed to carry this particular load.

EXAMPLE 2: John Smith, driving his truck tractor, utilizes a cargo broker, K&S Trucking, to obtain goods from Intermodal Inc. shipping company for his return trip back to New York.

Who is the Motor Carrier:

A. John Smith?
 B. K&S Trucking?
 C. Intermodal Inc.?

John Smith is the motor carrier, because K&S transferred the responsibility of the load to John Smith.

EXAMPLE 3: John Smith, driving his truck tractor, leases his services to Polyester Chemical Company. Polyester directs Smith to deliver a semi-trailer from New York to St. Louis.

Who is the Motor Carrier:

A. John Smith?
 B. Polyester?

The lease agreement between Polyester and Mr. Smith makes Polyester the motor carrier responsible for the load.

EXAMPLE 4: John Smith is driving a tractor/semi-trailer owned and operated by ABC Trucking.

Who is the Motor Carrier:

A. John Smith?
 B. ABC Trucking?

ABC Trucking is the motor carrier. John Smith is just a driver for ABC Trucking.


EXAMPLE 5: John Smith is driving a tractor owned by ABC Trucking, which has been leased to XYZ Trucking. XYZ uses the tractor to pull XYZ trailers in its regular shipping service.

Who is the Motor Carrier:

A. John Smith?
 B. ABC Trucking?
 C. XYZ Trucking?

In this case XYZ is the motor carrier, because XYZ is directing the carrying of the load.

Federal Motor Carrier
Safety Administration



U.S. Department of Transportation
www.fmcsa.dot.gov

Sources: FMCSA; GAO.

SaDIP Grant and Cooperative Agreement Distribution by State

Table 6: Distribution of SaDIP Grants by State

State	FY2002	FY2003	FY2004	FY2005	Total
Alaska	\$198,000	0	0	\$218,626	\$416,626
California	0		\$100,000	0	100,000
Connecticut	234,056	0	0	0	234,056
Georgia	269,820	0	409,000	553,733	1,232,553
Indiana	179,321	242,423	0	0	421,744
Kansas	0	0	0	373,436	373,436
Kentucky	199,000	0	0	0	199,000
Maryland	145,600	0	0	0	145,600
Massachusetts	100,000	249,972	0	0	349,972
Michigan	0	115,845	0	0	115,845
Minnesota	363,000	0	620,000	0	983,000
Montana	0	0	0	328,564	328,564
Nebraska	0	0	2,000	3,342	\$5,342
Nevada	427,443	0	0	350,000	777,443
New Hampshire	0	98,068	0	0	98,068
New Mexico	0	0	0	250,000	250,000
New York	0	0	300,000	0	300,000
North Carolina	0	0	193,350	0	193,350
Oklahoma	0	0	131,111	0	131,111
Pennsylvania	0	0	0	2,000,000	2,000,000
Rhode Island	25,000	0	26,000	0	51,000
South Carolina	350,000	0	0	0	350,000
South Dakota	270,000	0	0	0	270,000
Tennessee	0	0	436,027	149,334	585,361
Texas	0	148,424	533,611	0	682,035
Utah	0	0	433,500	128,853	562,353
Vermont	0	0	0	134,000	134,000
Washington	0	0	803,935	0	803,935
West Virginia	157,500	0	0	603,943	761,443
Total	\$2,918,740	\$854,732	\$3,988,534	\$5,093,831	\$12,855,837

Source: FMCSA.

Note: This data is current as of September 2005.

**Appendix IV
SaDIP Grant and Cooperative Agreement
Distribution by State**

Table 7: Distribution of SaDIP Cooperative Agreements by State

State	FY2002	FY2003	FY2004	FY2005	Total
Colorado	0	0	0	\$1,460,000	\$1,460,000
Georgia	0	0	0	612,051	612,051
Iowa	\$728,065	0	0	226,400	954,465
Louisiana	829,625	0	0	569,000	1,398,625
Ohio	406,330	0	\$91,000	224,400	721,730
Oklahoma	0	0	1,150,390	0	1,150,390
Tennessee	281,954	0	219,543	426,382	927,879
Vermont	0	0	0	136,500	136,500
Virginia	42,300	0	0	431,617	473,917
Total	\$2,288,274	\$0	\$1,460,933	\$4,086,350	\$7,835,557

Source: FMCSA.

Note: This data is as of September 2005.

SaDIP Case Study States

As part of our work, we conducted six case studies to examine how states are working to improve commercial motor vehicle crash data. Our visits to the six states yielded additional information about crash data quality improvement activities, the nature of their efforts, and the extent of progress made. States were chosen on a wide variety of factors, including crash data quality and participation in the SaDIP program.

Georgia

Georgia received a total of \$1,844,604 between 2002 and 2005 (see table 8) to conduct crash data improvement projects. During this period, Georgia made significant improvement in its crash data quality, despite undergoing a major state government reorganization process.

Table 8: Georgia SaDIP Funding History

Award year	Funds awarded	Agency	Award type
2005	\$612,051	FMCSA	Cooperative agreement
2005	\$553,733	FMCSA	Grant
2004	\$409,000	FMCSA	Grant
2002	\$269,820	NHTSA	Grant

Source: FMCSA.

SaDIP Projects

Georgia received its first SaDIP grant from the National Highway Traffic Safety Administration (NHTSA), and this grant was used to accomplish several projects, including: (1) hiring temporary employees to extract CMV crash reports from backlogged paper copies and microfilm them; (2) precoding the paper crash reports in preparation for their entry into the state repository system; (3) renting a mobile trailer to house temp employees; (4) developing a system to electronically transfer crash data from the state repository to the national database; (5) adding edit checks to the state crash database; (6) purchasing a new microfilm scanner/reader; and, (7) hiring a contractor to update the state's crash report manual. Progress on these projects was reported quarterly to NHTSA.

Georgia received two additional grants after FMCSA became the lead agency for the SaDIP program. The first grant was used to maintain the temporary employees. Additionally, these funds were used to hire a statistician as a SaDIP advocate. This grant allowed Georgia to eliminate its

reporting backlog from 2003 to the present. The second grant that Georgia received was used to fund its electronic crash records system. This system will electronically transfer crash records from local jurisdictions to the state repository system. This project has been put on hold following a state government reorganization.

**Crash Data
Collection/Reporting Issues**

Georgia historically has had the worst CMV crash data quality rating in the nation (see crash data quality statistics, table 9). This is due to the fact that until recently, Georgia was not submitting crash data to FMCSA. Georgia's current overall rating is "good," and it is rated "good" for completeness and "fair" for timeliness and accuracy. For all other rating periods prior to March 2004, Georgia had an overall rating of "poor." This improvement in its data quality is due in large part to the SaDIP program. Georgia's non-reporting was due to a technical problem, but the state was able to correct it in a timely manner because of the SaDIP funding it received.

Table 9: Georgia Crash Data Quality Statistics (Percentages)

	March 2004	June 2004	September 2004	December 2004	March 2005	June 2005
Completeness	117	115	95	95	95	95
Timeliness	6	8	27	48	65	80
Accuracy	84	82	82	83	94	93

Source: FMCSA.

SaDIP funds are the only federal funds currently being used to address data quality improvement in Georgia. Because the state's data quality was so poor, both FMCSA and the Federal Highway Administration indicated they would withhold federal funding unless Georgia improved its reporting. It was at this point that Georgia applied for SaDIP, and began focusing on its data quality. As of July 1, 2005, Georgia began a major state government reorganization process, and officials were unsure of how this would affect the quality of its crash data because all collection and reporting functions are moving to new departments. Officials expect to see a decrease in the state's rating during the transition period, but do not expect long-term problems.

State/Federal Coordination Issues

State and federal coordination on issues related to traffic safety data has not always been effective in Georgia. Between 1998 and 2002, Georgia had only submitted 250 fatal CMV crash records to FMCSA, yet between 2002 through 2003 Georgia submitted 410 CMV fatalities to FARS. Georgia’s Department of Public Safety, the agency responsible for crash reporting, did not have a functional computer system to upload the state’s crash file to FMCSA. The problem was discovered in 2002 and FMCSA offered assistance to fix the problem, but the Department of Public Safety did not accept the offer. FMCSA then threatened to withhold Georgia’s highway safety funds until the data issues were resolved; at this point the Department of Public Safety applied for—and received—SaDIP funding, and began work to resolve the crash data problems.

Data Quality Map

Georgia officials stated that the data quality map provided an incentive for the state to make data quality improvements in order to raise its rating from “poor” to “good.” State and federal officials acknowledge that the map is one indication of the progress the state has made in improving its CMV data quality.

Georgia officials never disagreed with their state’s rating on the data quality map. However, officials felt that the map did not recognize improvements that were taking place within the state to improve crash data. The state plans to continue to make improvements to the crash records system even after the state reaches the “good” rating.

Minnesota

Minnesota received a total of \$983,000 in 2002 and 2004 (see table 10) to conduct crash data improvement projects. During this period, Minnesota received safety data improvement grants from NHTSA and FMCSA.

Table 10: Minnesota SaDIP Funding History

Award year	Funds awarded	Agency	Award type
2004	\$370,000	FMCSA	Grant
2004	\$250,000	FMCSA	Grant
2002	\$363,000	NHTSA	Grant

Source: FMCSA.

SaDIP Projects

Minnesota received its first SaDIP grant while NHTSA was administering the program. This grant went to the Department of Public Safety, Office of Traffic Safety—the agency that receives NHTSA highway safety funds. The grant was used to fund two projects, including an electronic post-crash inspection form (Minnesota conducts in-depth post-crash inspections for crashes involving CMVs), and to purchase software that will allow for electronic transfer of CMV crash records between Driver and Vehicle Services and the state patrol (both agencies within the Department of Public Safety). In Minnesota, Driver and Vehicle Services collects crash reports from law enforcement agencies, and the state patrol is the office in charge of reporting crashes to FMCSA.

The Minnesota state patrol received subsequent funding after FMCSA became the lead agency on the SaDIP program. These funds have been used to provide computer hardware so that state patrol officers can access the Internet and submit their crash reports electronically through an online form. The second component of the grant is to provide ongoing CMV crash training to law enforcement officers throughout the state. This training will focus on correctly identifying CMVs and teaching officers why CMV crash data is important, and what it is used for at the state and national levels.

Crash Data Collection/Reporting Issues

Before SaDIP funds were received, the Minnesota state patrol had limited access to Driver and Vehicle Services records. As a result, the state patrol was only able to report crashes to FMCSA that were investigated by their officers or were sent directly to the state patrol by local jurisdictions. Now all CMV records that are available at the Driver and Vehicle Services are reported to FMCSA (see crash data quality statistics, table 11).

Table 11: Minnesota Crash Data Quality Statistics (Percentages)

	March 2004	June 2004	September 2004	December 2004	March 2005	June 2005
Completeness	117	117	116	123	121	121
Timeliness	72	59	58	50	67	81
Accuracy	78	74	82	86	91	93

Source: FMCSA.

The State of Minnesota encountered difficulty receiving crash reports from local law enforcement agencies. In addition, law enforcement officers incorrectly identified CMVs on crash reports. If law enforcement officers do not correctly identify the vehicle involved in the crash as a CMV, then the crash may not be extracted from the state crash file for submission to FMCSA.

State/Federal Coordination
Issues

Minnesota officials said that the state now has a crash data users group as a subsection of its Traffic Records Coordinating Committee. This group allows all users of crash data to discuss their data needs and limitations, and provides a forum for making collaborative recommendations regarding crash data improvements.

Minnesota officials and the FMCSA Division Administrator work very closely with each other to monitor and improve CMV crash data quality. Neither of these groups feels that the FMCSA data quality rating map is an accurate portrayal of a state's data quality. For example, Minnesota's rating decreased due to the fact that it was implementing its electronic data transfer software, and during that period crash records were not reported to FMCSA in a timely fashion. The map showed the state's rating as "poor" during this period, which did not reflect the fact that the state was making strides in improving its data quality.

Minnesota uses several sources of funding to improve its overall crash data and CMV crash data. In addition to FMCSA funding, NHTSA and state funds have been used to improve the state's data quality.

Data Quality Map

Minnesota crash data has gone from an overall "fair" rating to "poor" to its current rating as "good." The drop in the state's rating was actually a result of the state not being able to report crashes during the implementation of SaDIP-funded improvement projects. After the electronic systems were fully implemented, the state's rating improved to "good" for completeness, and "fair" for timeliness and accuracy.

Officials in Minnesota recognize that the map is an effective tool for getting the attention of decision-makers. While the map may not be an accurate assessment of the state's current data quality, both state and federal officials recognize that it does help to spotlight Minnesota's data quality status. Federal and state officials use the data quality map as a measure of the state's progress in improving data quality. State officials also use the

map as an indicator of the success of the state's SaDIP project. Finally, officials in Minnesota said that the data quality map has been used to identify data quality problems in the state, including timeliness and accuracy, and to create projects to improve those measures.

North Carolina

North Carolina received a total of \$193,350 in 2004 (see table 12) to conduct crash data improvement projects. While North Carolina has excellent crash data reporting at the state level, North Carolina continues to have complications reporting that data to FMCSA. North Carolina is a priority state for FMCSA given the fact that it is one of the top five states for commercial motor vehicle accidents in the nation.

Table 12: North Carolina SaDIP Funding History

Award year	Funds awarded	Agency	Award type
2004	\$193,350	FMCSA	Grant

Source: FMCSA.

SaDIP Projects

North Carolina is using its SaDIP grant to conduct two projects. First, the state conducted an analysis to determine what differences existed between the state data file and the federal crash file, and to try to determine why these differences were occurring. The completed analysis did not appear to fully address North Carolina's biggest problem, which is the data transfer between the two files.

North Carolina is also using SaDIP to update a backlog it has in entering crash reports into the state data file by providing overtime pay to employees.

Crash Data Collection/Reporting Issues

Historically, North Carolina has had poor CMV crash data (see table 13). North Carolina is also one of FMCSA's priority states because of the large amount of crashes that take place in the state. It was rated as having "poor" data for each period since FMCSA began rating states.

Table 13: North Carolina Crash Data Quality Statistics (Percentages)

	March 2004	June 2004	September 2004	December 2004	March 2005	June 2005
Completeness	82	82	77	77	77	77
Timeliness	0	100	0	0	1	2
Accuracy	81	100	81	80	80	81

Source: FMCSA.

North Carolina is unique in that it does not have a problem receiving crash reports from localities across the state. In other states, this is the biggest problem contributing to the states' data quality issues.¹ In North Carolina the problem is getting records from the state crash file into the FMCSA data systems. FMCSA officials worked extensively with North Carolina to fix the file compatibility issues that are creating the problem exporting the data to FMCSA, but North Carolina has failed to correct its information technology problems. According to state officials, the biggest issue in North Carolina is backlog. Even if the state corrects its backlog, the state's data rating will not improve because the records are not transferring correctly into the federal database. Additionally, North Carolina does not require certain elements to be captured on its crash report or in its state database that are required in the federal database. Specifically, North Carolina does not require that motor carrier DOT numbers are collected, which may contribute to the state's "poor" accuracy rating.

While North Carolina has very good data at the state level, the state's largest problem is reporting that data to the federal database. It appears that North Carolina's SaDIP projects are not focusing on this issue.

State/Federal Coordination Issues

North Carolina coordination between state agencies involved in CMV crash data has not always been effective. A major reorganization of the state's highway safety agency contributed to this lack of coordination, but the state is working to improve cooperation among these agencies with regards to traffic records. The largest factor contributing to North Carolina's poor crash data quality appears to be a lack of understanding by some state officials regarding how to convert a crash data file to the correct format in

¹Additionally, an FMCSA official told us that this problem is unique to North Carolina.

order to submit it to FMCSA. The SaDIP grant has provided the state the opportunity to review its crash data problems, a project that the state would not have conducted otherwise. The state is also using its own funds to implement an electronic crash reporting system in order to get crash data into the state data file more quickly.

Data Quality Map

State and federal officials in North Carolina use the data quality map to measure the progress the state is making with its SaDIP grant and with data improvements overall.

North Carolina state officials use the map as an incentive for implementing data improvements and they appear motivated to change North Carolina's rating for the better. The map has also been used in North Carolina to identify data quality problems and target improvement efforts, although more still needs to be done.

Both federal and state officials expect to continue to make improvements to the state's traffic records infrastructure after the state achieves the highest data rating.

Ohio

Ohio received a total of \$721,730 between 2002 and 2005 (see table 14) to conduct crash data improvement projects. Ohio has been very proactive in addressing traffic safety data concerns and the state has paid particular attention to using crash data for planning.

Table 14: Ohio SaDIP Funding History

Award year	Funds awarded	Agency	Award type
2005	\$224,400	FMCSA	Cooperative agreement
2004	\$91,000	FMCSA	Cooperative agreement
2002	\$406,330	NHTSA/FMCSA	Cooperative agreement

Source: FMCSA.

SaDIP Projects

Ohio was one of the first 5 pilot states to participate in the SaDIP program. It received funds through a cooperative agreement with the General Services Administration (GSA) and NHTSA. Through this agreement, the state created electronic crash reporting capabilities, purchased handheld devices, modified crash reporting software, and is providing training to law enforcement officers to help them properly identify CMV crashes.

Until recently, when FMCSA gained authority for the SaDIP cooperative agreements, Ohio had not submitted any progress reports to NHTSA on the status of these projects.

Crash Data Collection/Reporting Issues

Ohio has a “fair” overall data rating, with “good” ratings for completeness and accuracy, but a “poor” rating for timeliness (see crash data quality statistics, table 15). Ohio has been very aware of the importance of CMV crash data and state officials have been working to improve it for a long time, even before the SaDIP program.

Table 15: Ohio Crash Data Quality Statistics (Percentages)

	March 2004	June 2004	September 2004	December 2004	March 2005	June 2005
Completeness	95	95	95	95	95	95
Timeliness	15	17	11	23	40	46
Accuracy	84	97	97	98	98	98

Source: FMCSA.

The state of Ohio has over 1,000 local law enforcement jurisdictions that are responsible for reporting CMV accidents. Both large and small jurisdictions are likely responsible for Ohio’s “poor” crash data timeliness rating. The state has reduced the time lag in receiving crash reports from local jurisdictions from 62 days in 2004 to 30 days in 2005.

State/Federal Coordination Issues

Ohio state agencies involved in the collection and reporting of CMV crash data appear coordinated with each other, and have an active Traffic Records Coordinating Committee, which includes participation by FMCSA division officials. Ohio uses multiple sources of funding to address data

quality issues, including state funds, and the state is proactive in data improvement projects.

Data Quality Map

State and federal officials said that the map provided one gauge of Ohio's data quality, but they felt the map would be more useful if it were updated more often. The map has brought more attention to data quality issues in Ohio and is included in reports to state leaders.

State and federal officials in Ohio said that data quality improvements would still be a top priority regardless of the data quality map. Ohio officials also stated that the inaccuracies in the map had a big effect on staff morale. Local officials said they are working hard to improve their state's data quality, but the map does not accurately capture that improvement. State officials recognize the map provides a major incentive for implementing data quality improvements and maintaining the state's standing as a leader in traffic data quality.

Oklahoma

Oklahoma received a total of \$1,281,501 in 2004 (see table 16) to conduct crash data improvement projects. Oklahoma's traffic records coordinating committee has taken the lead in the coordination of crash data projects in the state.

Table 16: Oklahoma SaDIP Funding History

Award year	Funds awarded	Agency	Award type
2004	\$1,150,390	FMCSA	Cooperative agreement
2004	\$131,111	FMCSA	Grant

Source: FMCSA.

SaDIP Projects

Oklahoma began participation in the SaDIP program in July 2004 when it received a grant to purchase computer equipment, and then entered into a four year cooperative agreement with FMCSA in December 2004 to support its long term data quality improvement plans. This includes conducting a traffic records assessment, hiring a SaDIP coordinator, funding data entry for the record backlog, revising the state's crash report, and initiating a mobile data collection pilot project.

Oklahoma officials said that the projects that are taking place using SaDIP funds would not have been funded otherwise. The SaDIP grant and long-term cooperative agreement have allowed the state to focus on CMV data and to begin to make data-driven decisions in its highway safety planning.

Crash Collection/Reporting Issues

Until recently Oklahoma had a nine month crash report backlog to be entered into the state system (see crash data quality statistics, table 17). The backlog was primarily due to insufficient state resources. Overtime hours funded by SaDIP has helped to alleviate this backlog.

Table 17: Oklahoma Crash Data Quality Statistics (Percentages)

	March 2004	June 2004	September 2004	December 2004	March 2005	June 2005
Completeness	104	104	102	102	101	101
Timeliness	93	92	93	92	90	83
Accuracy	84	86	87	86	86	84

Source: FMCSA.

State/Federal Coordination Issues

Oklahoma has been working with the GSA to receive payments on its cooperative agreement, and officials said that this has caused the state some confusion.

Oklahoma’s crash data divisions are housed in the state’s Department of Public Safety and Department of Transportation. While crash records staff in both agencies work closely together to make sure that the state’s crash file is complete, Oklahoma officials were unaware of the value of CMV crash data at the national level, or of the criteria that FMCSA uses to rate CMV crash data.

Oklahoma is using funds from several sources to improve its entire crash data system, including funds provided by NHTSA and the Federal Highway Administration. SaDIP funds are the only funds that the state is using specifically for CMV data improvements.

Data Quality Map

While high-ranking officials in Oklahoma’s Department of Public Safety and the Highway Patrol are familiar with the data quality map, state officials involved with the SaDIP program were less familiar. We found that state officials involved with the SaDIP program had a detailed understanding of their state’s data quality, but had not used the data quality map as an indicator of progress for the SaDIP cooperative agreement.

Oklahoma officials stated that they would undertake their data improvement program regardless of whether or not the state was ranked “good.” State officials, for example, recognized that more improvements could be made in the state’s timeliness measure even though the state had a “good” rating in this category.

Washington

Washington received a total of \$803,935 in 2004 (see table 18) to conduct crash data improvement projects. The state’s traffic records coordinating committee is leading an electronic information processing initiative designed to reduce crash reporting inefficiencies and help the state meet national traffic safety goals.

Table 18: Washington SaDIP Funding History

Award year	Funds awarded	Agency	Award type
2004	\$188,460	FMCSA	Grant
2004	\$615,475	FMCSA	Grant

Source: FMCSA.

SaDIP Projects

SaDIP is primarily being used to implement an electronic data feed between the Washington Department of Transportation and the state patrol. This will allow records to be submitted instantly to the state patrol when they are entered into the state department of transportation database. It will also make records searchable so that eligible CMV crashes that are misidentified and not sent to the state patrol can be identified as CMV crashes, improving the completeness of the state’s CMV crash data.

SaDIP is also being used to eliminate a six-month backlog of crash reports that need to be entered into the state’s database housed at the Washington

Department of Transportation. Until reports are entered into the state Department of Transportation system, they cannot be transferred to the state patrol electronically, nor can those reports incorrectly identified as non-CMV crashes be easily identified. Until this takes place, Department of Transportation employees identify CMV reports among all crash reports and provide the state patrol with paper copies of the reports.

Crash Collection/Reporting Issues

The largest problem that Washington State has with its crash data is receiving the entire crash report, including supplemental form, from the law enforcement offices that generate them (see crash data quality statistics, table 19).

Table 19: Washington Crash Data Quality Statistics (Percentages)

	March 2004	June 2004	September 2004	December 2004	March 2005	June 2005
Completeness	96	96	103	103	108	108
Timeliness	99	98	98	99	99	99
Accuracy	95	96	96	97	97	97

Source: FMCSA.

Washington State also has a problem with incorrect identification of CMVs on police accident reports. If police do not correctly identify the vehicle involved in the crash as a CMV, then it may not get extracted from the state crash file for submission to FMCSA.

State/Federal Coordination Issues

Washington State has very good cooperation among state agencies involved in crash data collection and reporting. The state also has a good working relationship with its FMCSA division office. It also uses FMCSA and state funds to address data quality issues, making decisions on how to use these funds effectively through an active Traffic Records Coordinating Committee.

While SaDIP initiatives in Washington State are a topic of discussion at the Traffic Records Coordinating Committee meetings, the committee coordinator was not specifically aware of FMCSA's grant-making process and how those grants are accessed and then allocated by the state. Whereas NHTSA funds are accessed via the Traffic Records Coordinating

Committee forum, FMCSA funds are processed within the Washington State Patrol's Commercial Vehicle Division. To date there has been no problem targeting safety data funding to immediate priorities as identified by the Traffic Records Coordinating Committee, but this is an area that may need to be addressed in the future.

Data Quality Map

Washington State officials recognize that the data quality map is an important indicator of the state's progress in improving its crash records system. According to state officials, the data quality map has been used to measure the progress of the state's data quality improvements in general.

State officials also indicated that they would continue to make improvements to their traffic records systems regardless of the state's data quality rating. Specifically, the Traffic Records Coordinating Committee is helping to coordinate the state's electronic reporting system.

Even though the state has consistently ranked "good" on the map since its inception, state officials report that the map has been helpful for identifying areas where the state can make data quality improvements.

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